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ERRATA

page 41, lines 17, 18, for Plates 21, 22 read Plates 22, 23
page 46, line 1, for Plate 31 read Plate 33
page 50, line 6, for fig. 18 read fig. 28; line 30, for Plate 31, figs. 42-44 read Plates 31, 42-44
page 52, line 25, for 15 read 16
page 104, line 19, for 125, 126 read 123, 124
page 137, line 36, for figs. 2, 4, 5, 6 read figs. 2, 4
page 140, line 19, for fig. 32 read fig. 31
page 143, line 7, for figs. 7, 8, 12 read 7, 8, 13
page 148, line 13, for fig. 7 read fig. 13
page 150, line 32, for figs. 1-21, 22, 27-30, 32-38 read figs. 1-30, 32-38
page 238, last line, for figs. 117-122 read figs. 1-4, 17-22
page 241, line 28, for Plate 116 read Plate 117
page 246, line 8, for figs. 11, 12 read figs. 10, 11
page 296, last line, for Plate 172 read Plate 161
page 298, first line, for Plate 173 read Plate 162; line 5, for fig. 40 read fig. 48
Plate 6, site number 26 is in New Jersey opposite Port Jervis, N. Y.

ROCHESTER MUSEUM MEMOIR No. 1.

THE PRE-IROQUOIAN OCCUPATIONS OF NEW YORK STATE

by

WILLIAM A. RITCHIE

Archaeologist

ROCHESTER MUSEUM OF ARTS AND SCIENCES

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THE
PRE-IROQUOIAN OCCUPATIONS
OF
NEW YORK STATE

By William Augustus Ritchie

Submitted in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy, in the
Faculty of Philosophy, Columbia University

Awarded an A. Cressy Morrison Prize in Natural
Science in 1943 by The New York Academy
of Sciences

DEDICATED

In deep appreciation and esteem

to

ARTHUR CASWELL PARKER

Who, most of all, made possible my work

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THE PRE-IROQUOIAN OCCUPATIONS OF NEW YORK STATE

By William A. Ritchie, Archaeologist

Rochester Museum of Arts and Sciences

Introduction and Acknowledgments

The purpose of this work is to afford systematic expression to existing knowledge of aboriginal cultures in New York state, prior to the appearance, or at least to the dominion of the Iroquois tribes, whose vanguard, it is believed, appeared in the wooded hills of our southeastern counties early in the fifteenth century of the Christian era. The data embodied in the correlation have been garnered over a period of many years by numerous individuals, lay and professional, to whom full credit is given in the appropriate pages. Principally, however, the reconstruction rests upon the investigations of the Rochester Museum of Arts and Sciences, conducted since 1925, when Dr. Arthur C. Parker became its director and the writer its archaeologist. Much of the material herein described has not previously been published, while that appearing in monographic studies has been re-evaluated and revised in the light of the whole before incorporation.[1]

The surveys and excavations of the Rochester Museum have covered virtually the entire state except for its extreme eastern portion; the knowledge so gained being supplemented by analyses of collections, private and institutional, situated throughout New York and its environs. While the present conception of culture configuration and sequence is not in any sense a fully formed imago, it is believed to be essentially sound, awaiting only further persistent efforts to develop and perfect its parts.

No small debt of gratitude is due those persons whose interest and generosity have nurtured its growth; land owners who have permitted excavations; amateur workers and collectors whose findings have been offered for study; young students whose aid in the field and laboratory has usually borne no pecuniary reward;[2] and finally and especially, the museum director, Dr. Arthur C. Parker, and his Board of Commissioners, who have made these researches possible, and the Rochester Museum Association and its Board of Trustees, who have generously provided funds for this publication. The warmest appreciation of the writer is expressed to all.

---

[1] In general, the treatment follows that of the writer's earlier attempt (see Ritchie, 1938b), but the present work is much more exhaustive and utilizes the considerable amount of recently acquired information.

[2] A sense of deep appreciation impels mention of the following assistants, mainly college students, whose help has been indispensable: Charles F. Wray, Mortimer C. Howe, John H. Bailey, J. Sheldon Fisher, John Swart, David Chase, David Kaiser, Edmund Carpenter, Fred Lane, Dorothy E. Fraser, Virginia Gould, Marian E. White, and Frances J. Ninfo, the writer's secretary. To Margaret Contant thanks are also due for aid in proof-reading and in the preparation of the index.

Development of Archaeological Research in New York State

Interest in the prehistorical background of the Empire state seems first to have been voiced by the versatile and prescient De Witt Clinton in a brief paper on the earthworks of western New York, read before the Literary and Philosophical Society of New York, in 1817, in an attempt, as he said, "to awaken the public mind to a subject of great importance before the means of investigation were entirely lost."[1] His cry in the wilderness passed unheard, however, for when E. G. Squier, in 1848, made an earthwork survey of northern, central, and western New York under the joint auspices of the Smithsonian Institution and the New York Historical Society, he found all save one of the then known and relatively rare sepulchral mounds already looted by treasure seekers, and many of the earth-walled fortifications partially or completely obliterated by the plow.[2]

Squier's surveys, resulting in well-made maps and measurements, are probably in the main reliable and constitute in most cases the only records of the earthworks studied by him. No serious exception will be taken to his conclusion that the earth-walled structures of western New York were erected by the Iroquois not long before the discovery,[3] although it is now clear that Owasco culture groups, preceding the Iroquois, were the authors of some. His limited experience with New York burial tumuli, however, evidently concealed, even from his experienced eye, their connection with the vastly more numerous Hopewellian mounds of Ohio,[4] in whose exploration he had pioneered.[5]

Almost half a century elapsed between Squier and the next serious student of early New York antiquities, the Rev. Dr. William M. Beauchamp, often referred to as "the dean of New York archaeologists," who devoted many years of a long lifetime to the pursuit of historical and prehistorical research, with special reference to the central part of the state, his residence being in Onondaga County. Under the aegis of the New York State Museum, at Albany, he examined many private collections of Indian artifacts about the state, illustrating what he deemed the important pieces, and prepared from time to time the monographic studies which that museum published between 1897 and 1905.[6]

While primarily and largely of necessity these are relic catalogs, they have much value for distributional studies and record many important objects later acquired by the museum and subsequently lost in the State Capitol fire in 1911.

---

[1]Clinton, 1818.

[2]Squier, 1851, pp. 11, 97.

[3]Ibid., 1851, pp. 140-141.

[4]Ibid., 1851, p. 97.

[5]Squier and Davis, 1848.

[6]Beauchamp, 1897, 1897a, 1898, 1901, 1902, 1902a, 1903, 1905. A large amount of his illustrated and unpublished material is in the archives of the Onondaga County Historical Society at Syracuse, and in the possession of his daughter, Mrs. Grace B. Lodder, Syracuse, N. Y.

A further contribution from Beauchamp's pen is his pioneer archaeological atlas of the state, entitled the "Aboriginal Occupation of New York."[1] Unfortunately, it is of scant use to the present student of culture analysis because of the tantalizingly vague descriptions of material found, but it served as the basis of the second volume of Parker's work presently to be referred to.[2]

That Beauchamp had begun to surmise pre-Iroquoian culture diversity is evident in his suggestion of early visits of the Eskimo from the Gulf of St. Lawrence to account for the ground slate points and semilunar knives, found principally along the St. Lawrence, upper Hudson, and Seneca rivers.[3] A fairly clear statement of his views, which illustrates also the condition of knowledge in the matter of culture sequence at the turn of the present century, is found in the following quotation from his history of Onondaga County:[4] "There are three periods in the aboriginal life of Onondaga. The first is distinctly prehistoric, when men came whom we can not directly connect with those whom Europeans found here.

"The next includes those of the Iroquois, who were here in prehistoric times, but who left such traces as to establish a connection with the Onondagas of colonial and later days.

"The first are shown to have come from different directions, but their age and sequence are not so clear. Some had vessels of potstone; others had none of these or even earthenware; others again earthen vessels, but none of the Iroquois type.

"They also had many articles which never have been found on Iroquois sites. We have some knowledge of the direction from which many of these came; none at all of the time in which they lived."

There soon appeared on the scene, however, a corps of young men, under the tutelege of Professor Frederick Ward Putnam, then (1899) Anthropologist of the American Museum of Natural History, who were to initiate the modern period of prehistoric research in New York. These students, George Pepper, Mark R. Harrington, Arthur C. Parker, and Alanson Skinner, variously employed by the American Museum of Natural History and the Museum of the American Indian, Heye Foundation, undertook the first extensive field excavations in the state, focusing their efforts upon nearby coastal sites and somewhat later upon problems of Iroquois prehistory. Harrington's[5] and especially Skinner's[6] publications still comprise the bulk of the writings on New York coastal and tide-water cultures, and in addition these authors made substantial contributions to Iroquois archaeology, in which field Parker, as State Archaeologist (1906-24), became the leading authority.

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[1]Beauchamp, 1900.

[2]Parker, 1922, Pt. 2.

[3]Beauchamp, 1897a, p. 65.

[4]Ibid., 1908, p. 57.

[5]Harrington, 1909, 1909a, 1924.

[6]Skinner, 1903, 1903a, 1906, 1909, 1909a, 1909b, 1912, 1913, 1915, 1915a, 1915b, 1919, 1920, 1925.

Parker, who early realized the essential need for intensive site excavation as the basis for the analytical study of cultures, and exercised his ideas under the protest of those still adhering to the concepts of the collection era, systematized the large collections of the State Museum, excavated on numerous Iroquois stations, several Coastal components, two sites of the Owasco Aspect, and a still earlier cemetery (Middlesex Focus) at Vine Valley, Canandaigua Lake, and in 1922 summarized his findings in his "Archeological History of New York," which contained the initial attempt at culture classification for the state.

Epitomised, this outline consists of four main periods of occupation, viz.: the Algonkian occupation, Eskimo-like culture, Mound-Builder occupation, and Iroquois occupation.[1] Three phases of the first or Algonkian are postulated: an early, which yields "crude implements, large, clumsy spears, steatite pottery, some rough and poor grade clay pottery, occasionally a polished stone implement, net sinkers, large flakes of chert or stone notched at the top for choppers, and now and then a grooved axe and celt. Only in very rare instances are any implements of bone found. Probably no graves of this period have ever been found. This period seems to have been influenced by the Eskimo."[2]

"A second or intermediate period of the Algonkian occupation is characterized by a larger number of grooved axes, roller pestles, a greater abundance of crude pottery, the surface of which is scratched or stamped with fabric or cord marks, steatite pottery, by pits filled with crumbling and almost completely disintegrated refuse and especially by the great abundance of drills, of notched arrowheads and spears of chert and other stone. Many of the finest ceremonial stones from New York belong to this intermediate period. The sites are generally along the waterways, on the banks or upon the high level fields near creeks, lakes and rivers. To some extent the early Algonkian sites are found in such places also, but most generally on the slopes and terraces far above the present river beds.

"The later Algonkian occupation is more definite in character and covers almost the entire area of the State. It is characterized by numerous flints, by steatite pottery, clay pottery, notched choppers, grooved axes, celts, adzes, hoes, some copper implements, gouges, gorgets, birdstones, banner stones, cord-marked and pattern-stamped clay pottery, mediocre clay pipes, roller pestles, numerous net sinkers, and a considerable amount of bone implements, as awls, harpoons, needles and beads. The sites are generally on lowlands near streams and lakes, none of importance being on hilltops. The later Algonkian people were agricultural as is proved by the numerous instances in which charred maize and beans have been found in refuse pits. The later Algonkian tribes were more sedentary than their predecessors and their settlements presumably larger. This seems to be indicated by the presence of deposits of refuse, by refuse pits and heaps and by large areas of ground filled with carbonized matter, fire-burned stone and calcined bone.

"Graves of this middle period are found, the skeletons being doubled up on one side (flexed). There are seldom any artifacts in the graves, the skeletons alone remaining to tell the story."[3]

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[1]Parker, 1922, pp. 46-130.

[2]Ibid., p. 48.

[3]Ibid., 1922, pp. 48-49.

CLASSIFICATION OF ABORIGINAL CULTURES OF NEW YORK STATE

PATTERN	PHASE	ASPECT	FOCUS	COMPONENT
Mississippi	Upper	Iroquois	Huron Neutral Erie Seneca Cayuga Onondaga Oneida Mohawk Tuscarora Andaste	Various sites in Ontario, Quebec, Ohio, N.Y., and Pa.
———	Hopewellian	———	New York	Geneseo Squawkie Hill
Woodland	Northeastern	Owasco	Castle Creek	Bainbridge Castle Creek
			Canandaigua	Jack's Reef Canandaigua Levanna Owasco Lake
		Vine Valley	Point Peninsula	Port Maitland, Ont. Jack's Reef Kipp Island René Menard Bridge Vinette Oberlander, #2 West Rush Point Peninsula
			Middlesex	Orwell, Vt. Swanton, Vt. Vine Valley Palatine Bridge
		Coastal	"Late" "Early"	Sites in Conn., Eastern N.Y. and N.J.
———	———	———	Orient	Jamesport Southampton Orient
Archaic		Laurentian	Vergennes	Vergennes, Vt.
			Vosburg	Vosburg, etc.
			Brewerton	Smoky Hollow Oberlander, #1 Robinson
		———	Frontenac	Frontenac Island
		———	Lamoka	Scottsville Geneva Lamoka Lake

Plate 1. Classification of Aboriginal Cultures of New York State

The arrangement is in convenient but not entirely historical order.

"The Algonkian peoples of the tide water and Long Island present a slightly different problem, but the type of the culture is unmistakable. The most abundant traces are found in the refuse layers and shell heaps on Long Island, Staten Island, the Westchester coast and the northern end of Manhattan Island. The coastal Algonkins differed only from their inland kinsmen through the immediate influence of environment. For example, they frequently stamped their pottery with the edge of a scalloped shell instead of a cord-wrapped paddle, and they used shell-fish to a large extent for food."[1]

Concerning the characteristics of the Eskimo-like culture, Parker says: "In various localities throughout the State there are sites that seem to have been occupied at a very early period. The implements found are few and crude, with now and then the anomaly of some wonderfully fine specimen. The fire pits show little refuse and almost no bone, save fragments calcined by heat. In some of these sites fire-cracked stones are abundant. Graves are shallow and show no trace of osseous substance.

"So far we have described nothing especially characteristic, but when we discover on sites like these semilunar knives of slate and rubbed slate doubled-edged knives and projectile points, we have something as a guide. Associated with these objects are found fragments of soapstone pottery. Chert arrowheads are broad, large, and have sloping shoulders. Some are almost lozenge-shaped and many have thick, wide necks as if used as lance or harpoon heads. Celts and polished stone scrapers are found on these sites as also are chert scrapers and perforators. On a few of these sites bone harpoons have been found in ashy deposits."--"In some sites of this general cultural horizon will be found gouges, hemispheres of hematite, figurines, ornaments of unusual shape, and many other unfamiliar artifacts.

"It is evident that sites of this character are not Iroquoian, that they are not of the clay pot using Algonkian tribes, and that there is little distinctive in them resembling the mound-building people, except for an occasional bird stone. A study leads to the conclusion that sites of this character were once occupied by a people influenced by the Eskimo, if not actually by the Eskimo themselves. Our investigation points out that the influence came from the north, especially the northeast."[2]

The following excerpt contains Parker's analysis of the diagnostics of his Mound-Builder occupation: "In New York the mound-builder culture is not always coincident with the presence of mounds. Scattered relics of this culture in the form of monitor pipes, gorgets, banner stones, stone tubes and even isolated burials and stone graves indicate the one-time presence or cultural influence of the 'mound-building' Indians.

"For the purposes of our analysis it is our intention to treat the mounds of New York as one phase of an ethnic culture. We are enabled by this method to treat other evidences of that culture without necessarily confining our descriptions and facts to an immediate association with mounds, though we take our datum from them.

"It is not easy to define the boundaries of this culture because the implements and ornaments that it produced are in many respects similar to some of those made by both the

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[1]Parker, 1922, p. 49.

[2]Ibid., pp. 79-81.

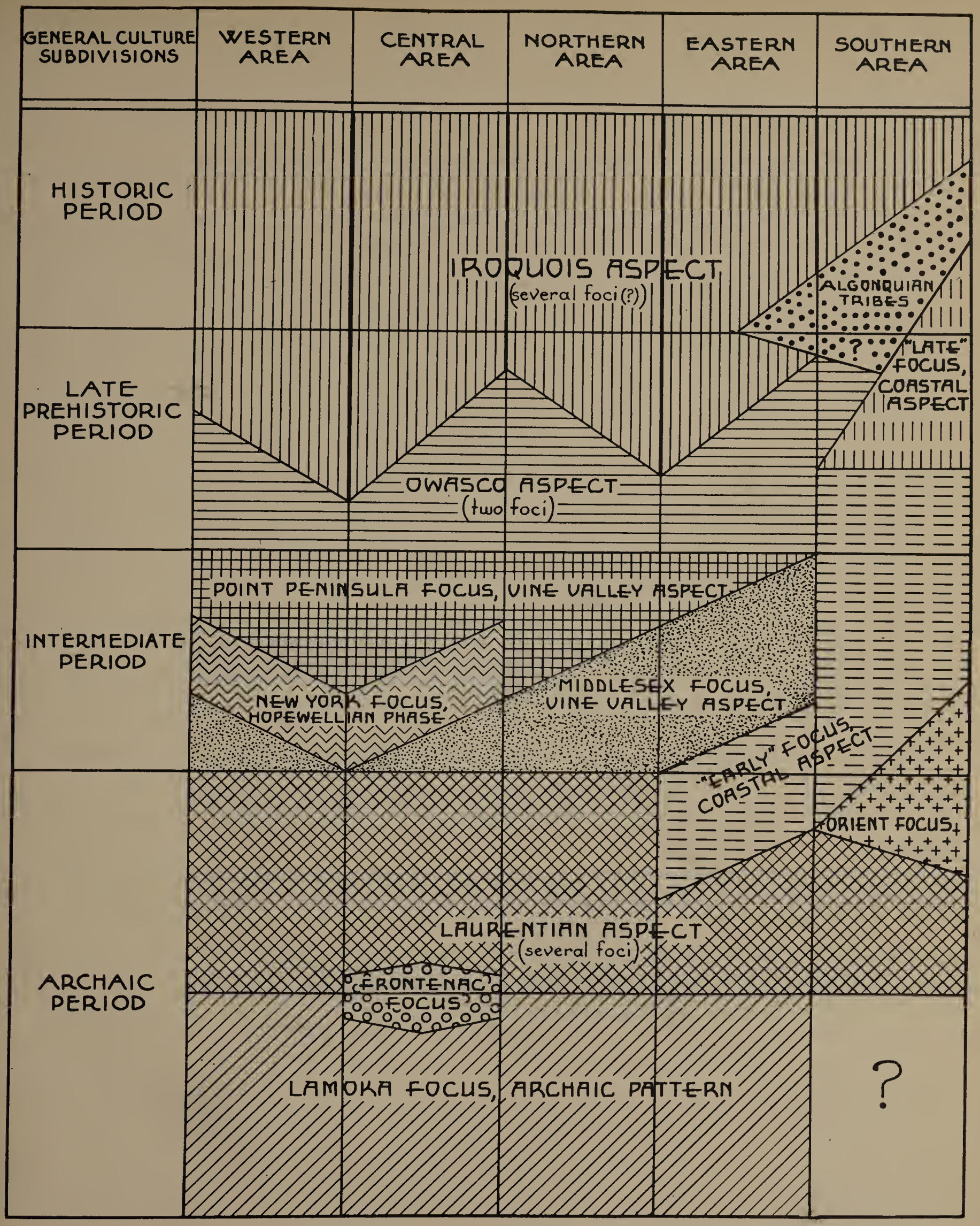
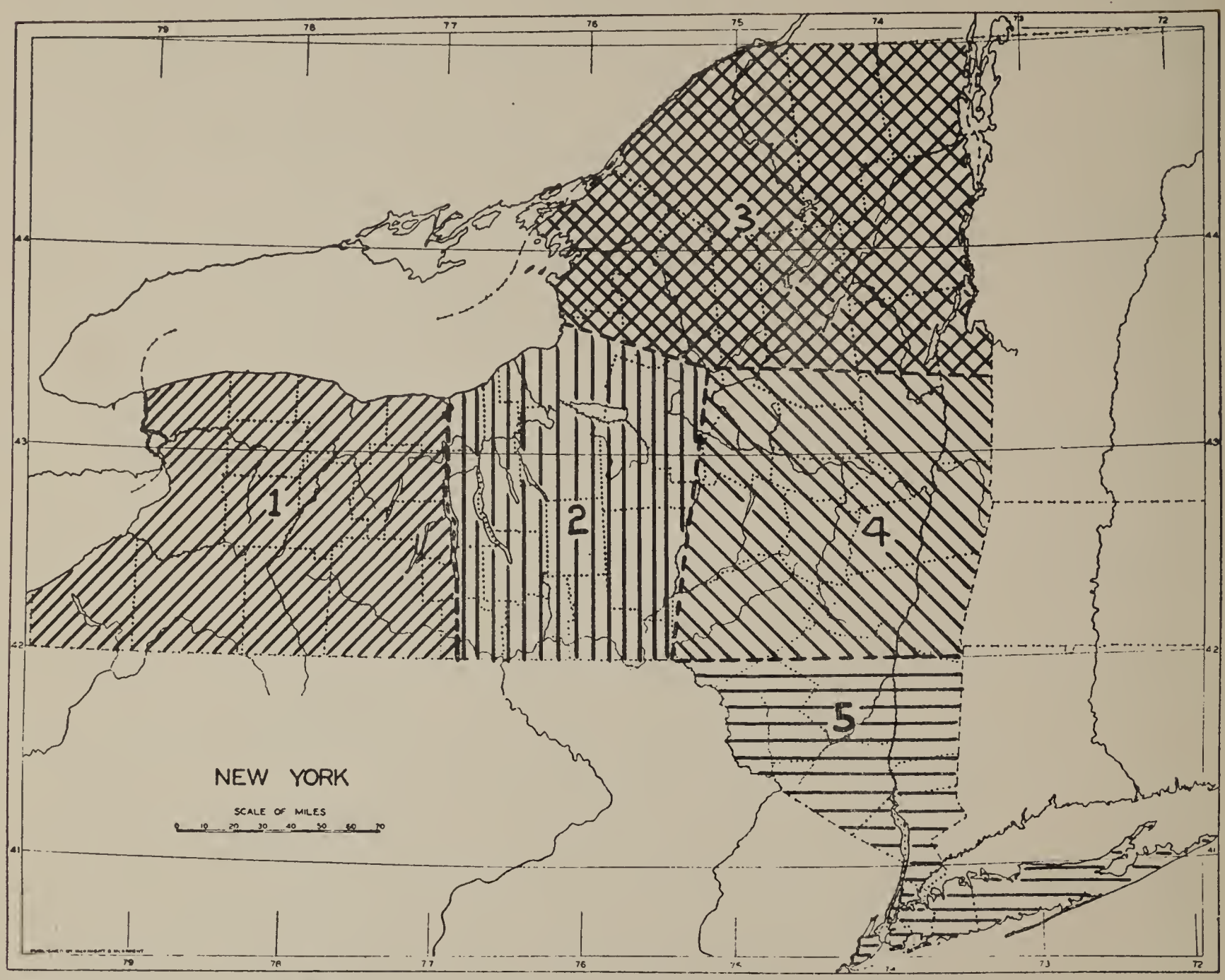


Plate 2. Aboriginal Cultures of New York State
Shown in Historical Perspective

The suggested geographical subdivisions are arbitrary (see Plate 3).

ARBITRARY GEOGRAPHICAL SUBDIVISIONS



1. WESTERN AREA
2. CENTRAL AREA
3. NORTHERN AREA
4. EASTERN AREA
5. SOUTHERN AREA

Arbitrary Geographical Subdivisions of New York State
To be used with Plate 2

Algonkian and Iroquoian peoples in New York and the adjacent territory, but an examination of the mounds in the western portion of the State gives us certain facts upon which to base our observations. Even in a larger way the Ohio mounds afford us a basis for comparison.

"New York mounds and the occupied sites contiguous to them, particularly those in Cattaraugus, Chautauqua, Erie and Livingston counties, indicate that the people of the mound culture used (1) platform pipes, (2) grooved axes, (2) celts, (4) adzes, (5) gouges, (6) gorgets, (7) banner stones, (8) boat stones, (9) bird stones, (10) stone tubes of several varieties, (11) native copper implements and ornaments such as chisels, celts, spearheads and arrowheads, beads, ear ornaments, etc., (12) numerous flint drills or perforators, (13) shell beads (14) pearl beads, (15) mica ornaments, (16) bone and antler implements, (17) notched and triangular arrowheads and spearheads, (18) hematite articles, (19) pottery, (20) discoid stones, (21) concaved disks, (22) cylindrical and bell pestles, (23) were a village-dwelling people, (24) that they buried in small mounds, (25) cultivated corn and other vegetable foods and tobacco, (26) made woven fabrics.

"The evidences of mound culture are more numerous in extreme western New York than east of the Genesee river. The culture seems to have entered the State along the shores of Lake Erie and up from the Allegheny river. Chautauqua, Erie and Cattaraugus counties thus contain a larger number of mounds than do other portions of the State, though certain other sections, as the Genesee valley, have yielded relics in abundance."[1]

The writer's researches of the past fifteen years, to be summarized in the following pages, have resulted in a second tentative outline of culture periods for New York, as shown on Plate 1. Although the terminology has changed under the influence of the Midwestern Taxonomic Method, inaugurated by McKern,[2] we may, in general, effect the following correlations with the outline just presented. The recently defined Laurentian Aspect equates rather closely in basic traits with Parker's Eskimo-like culture, if we omit from the latter hemispheres of hematite, figurines, and the birdstone, and add the plummet and certain forms of the bannerstone, which seem to be diagnostic for the aspect as a whole.

A similar correspondence exists between the two systems if the traits of Parker's Mound-Builder occupation be compared with those established for the Vine Valley Aspect (Point Peninsula and Middlesex foci) and the Hopewellian Phase, New York Focus, taken together. Elements ascribed to the Mound-Builder congeries not thus far found in components of the latter cultures are the grooved axe, gouge, bannerstone, hematite articles, discoid stone, concave disks, and bell pestle, and conversely, such traits as the antler comb, hafted beaver incisor engraving tool, harpoons of many forms, to mention only a few, chiefly pertaining to the Point Peninsula Focus, are missing from the Mound-Builder inventory.

The remainder of our present table (Plate 1) reveals the Canandaigua and Castle Creek foci, Owasco Aspect, for which the type station of the former was described by Parker;[3]

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[1]Parker, 1922, pp. 85-86.

[2]McKern, 1939, pp. 301-313.

[3]1922, pp. 340-342.

SUGGESTED CULTURE SEQUENCE and CHRONOLOGY for NEW YORK STATE

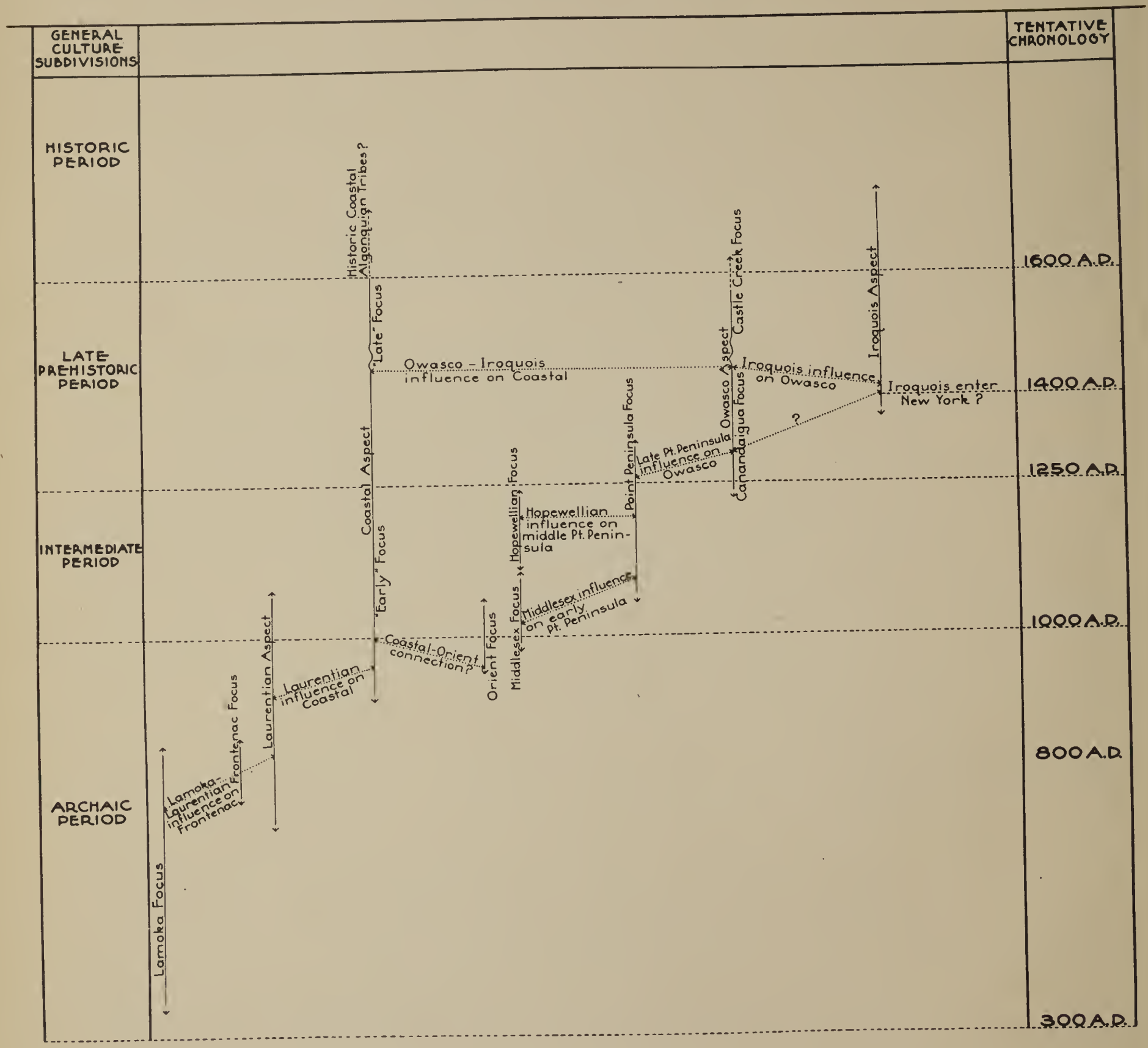

Plate 4. Tentative Culture Sequence and Chronology for New York State

the "Late" and "Early" foci of the Coastal Aspect, recognized, but also not defined by him; the recently discovered Orient and Frontenac foci; and the Lamoka Focus, for none of which correlation with the older scheme is possible. Evidence has not yet accumulated to validate the three-fold period of Algonkian occupation hypothesized by Dr. Parker as his first level of culture.

As shown in convenient arrangement on Plate 1 the postulated historical sequence of the several occupations is imperfectly depicted, but an attempt to remedy this lack has been made in the chart illustrated as Plate 2,[1] (the arbitrary geographical subdivisions referred to thereon being plotted on the map, given as Plate 3), and in the scheme presented on Plate 4.[2]

The Historic Tribes of New York

The Iroquois

At the dawn of the historic period in New York, early in the seventeenth century, tribes of two linquistic stocks, Iroquois and Algonquian, are known to have been resident.

The former controlled by far the larger territory, Algonquian speaking groups occupying only Long Island and the highland areas contiguous to the Delaware and Hudson rivers, about as far north on the latter as Glens Falls, Warren County, as shown on the map, Plate 5.[3]

West of these Algonquian holdings extended the topographically varied realm of the Iroquois, embracing the little-frequented Adirondack Mountains; the Tughill Plateau (Rutland Hills), east of Watertown, in Jefferson County which, with the nearby St. Lawrence Valley constituted the old homeland of the Mohawk - Oneida - Onondaga; the occasionally occupied lake plain bordering Lake Ontario to about the latitude of Syracuse; and finally and most important, as the situation of their principal villages in all periods of their tenure, the rugged central uplands traversed by many ancient parallel river valleys, some the loci of the Finger Lakes, known geologically as the Appalachian highland province.

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[1]This mode of presentation is modified from Rouse, 1939, p. 25.

[2]Schematization suggested by Dr. Frederica de Laguna, Bryn Mawr College.

[3]Based on Beauchamp's map of territorial divisions of the aborigines of New York (Beauchamp, 1905a, Plate 18). Location of Iroquois tribes according to Beauchamp and A. C. Parker (unpublished data); of Algonquian tribes according to Ruttenber, 1872 and Hodge (ed.), 1907. The principal original sources relating to the latter are Wassenaer, 1624-1626 (see O'Callaghan, 1850, pp. 27, 28; Jameson, 1909, pp. 67, 68), de Laet, 1625 (New York Historical Society Collections, Series 2, Vol. 1, 1841, pp. 297-298, 305,309; Jameson, 1909, pp. 45-47), and van der Donck, whose map of New Netherland, 1656, showing the location of most of the tribes enumerated, is to be found as the frontispiece of N. Y. Hist. Soc. Coll., Series 2, Vol. 1, 1841 and facing p. 294 of Jameson, 1909.

Plate 5.

Historic Iroquois and Algonquian Tribes of
New York State about 1600 A.D.
After Beauchamp and Ruttenber

Proceeding eastward from Lake Erie and the Niagara River over the presumed route of the initial Iroquois thrust, one traverses first the contiguous lands of the Erie and Neutral, those of the former constituting a strip of uncertain breadth lying along the Erie shores of Ohio, Pennsylvania, and New York, thence eastward presumably to the Genesee Valley. The possessions of the latter included the Ontario Peninsula and originally extended, perhaps, as far as the Genesee, but this eastern boundary had receded to near Batavia (Genesee County by about 1600.

Beyond the Genesee came the broad zone claimed by the Seneca, stretching from Lake Ontario an indefinite distance into Pennsylvania, and terminating on the east in the ridge forming the watershed between Seneca and Cayuga lakes. Here began the narrow paralleling precinct of the Cayuga which ended in the highlands east of Owasco Lake. Their neighbors, the Onondaga, held the large territory from the St. Lawrence, at the foot of Lake Ontario, southward probably into Pennsylvania, and eastward to a line roughly bisecting Oneida Lake. The Oneida, who claimed jurisdiction over a parallel tract touching the Susquehanna River on the south, along the northern periphery of the present Delaware County, were confronted on their eastern boundary by the Mohawk, largest land proprietors and controllers of all northeastern New York, to a frontier running from near Whitehall (Warren County) southwestward a few miles west of Schenectady, to a southern boundary approximating that of Schoharie County.

Algonquian Tribes

Although relations were not always cordial among the members of the Iroquois confederacy, this body as a whole seems constantly to have been on inimical terms with the Algonquian-speaking groups to the east, of whom the most powerful at this time were the Mahican, known to the Dutch as "River Indians" and to the French as the "Loups" (wolves). The names and territorial limitations of the tribal constituents of this important confederacy are imperfectly known. Together they occupied the headwaters of the Hudson, Housatonic, and Connecticut rivers, the eastern watershed of lakes George and Champlain, and the lands southward along the Hudson, on the west bank to Catskill Creek and inland through northern Delaware County, on the east bank to near Poughkeepsie, including the western portion of lower New England (Plate 5).[1]

The Wappinger confederacy, compounded of the Wappinger proper, Nochpeem, Kitchawank, Sintsink, Pachami, Wecquaesgeek, Manhattan, Siwanoy, and Tankiteke inhabited the east bank of the Hudson from the Mahican boundary south to New York Bay, including Manhattan Island and the region eastward across southern Connecticut to somewhat beyond the Connecticut River.[2]

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[1]Ruttenber, 1872, p. 85.

[2]Ibid., pp. 77-85.

Below the Mahican limits on the west side of the Hudson, and between it and the Susquehanna, were situated sundry groups of the Lenapé or Delaware confederacy, which comprised in its entirety three principal divisions, viz., the Minsi or Munsee, Unami, and Unalachtigo. To the former, considered almost a distinct people, belonged most of the Lenapé terrain in New York, extending thence into Pennsylvania and New Jersey along both banks of the Delaware. Ruttenber assigns them six "chieftaincies" or subtribes, five constituting the so-called Esopus tribes of the Catskill area, the sixth, the Minisink or principal subdivision, holding the southwestern portions of Orange and Ulster Counties, New York, and northwestern New Jersey.[1]

According to the same author,[2] the remaining Lenapé tribes, viz., the Haverstraw and Tappan of southern Orange and Rockland counties, New York, and adjacent New Jersey, belonged to the Unami division, along with their New Jersey kinsfolk, the Aquackanonk, Hackinsac, Raritan, and Neversink or Navisink. It is believed that pressure exerted by the hostile Conestoga or Susquehannock, an Iroquois tribe of the Susquehanna Valley, resulted in the northward displacement of the Unami from the lower Delaware in Pennsylvania in late prehistoric times.

The Unalachtigo, the third main Lenapé division, which inhabited the extreme southern part of the Delaware Valley of Delaware and probably adjacent portions of New Jersey, do not directly concern us here.

All or most of Long Island at this time was in possession of the Montauk confederacy, comprising the Matinecoc, Nesaquake, Setauket, Corchaug, Manhasset, Montauk, Shinnecock, Patchoag, Secatoag, Marsapequa, and Merric. Ruttenber would add also the Canarsee and Rockaway, dwelling at the west end, but this is questioned by later writers, who think they may have been independent tribes.[3]

Ruttenber refers to the Montauk proper of Easthampton, at the eastern extremity, as "the head of the tribe of Montauk, the other divisions named being simply clans or groups."[4]

Our special interest in these Algonquian tribes of eastern New York and adjacent terrain arises from their probable connection with at least some of the archaeological remains found within their historic domains. Earlier writers have in several instances attempted this connection,[5] emboldened, perhaps, by the more cogent evidence linking Iroquois tribes in the northeast with precontact remains, through the intermediacy of protohistoric and documented historic sites covering much of the seventeenth century. Actually, a parallel situation for the Algonquian tribes is not on record; the few relatively late components, historically identified with a reasonable degree of certainty, contribute virtually nothing to our knowledge of preceding culture phases,[6] and the significant early contact settlements seem either to have been destroyed by the development of the densest population on the continent, or are still to

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[1]Ruttenber, 1872, pp. 93-96.

[2]Ibid., pp. 89-93.

[3]Hodge, (ed.), 1907, Pt. 1, pp. 199, 934.

[4]Ruttenber, 1872, p. 75.

[5]Skinner, 1907; 1919, pp. 75-124.

[6]Saville, 1920.

be discovered.[1] Not improbably transitional Algonquian sites were originally much scarcer than those of the more remote inland Iroquois, for acculturation must have proceeded very rapidly in the area of first European exploration and settlement. As Hunt says, "The native who had known and used the keen steel tools of the white man was unlikely to renounce them and was shortly unable to do so, so swiftly did the skills of the Stone Age vanish. 'The coveted tools or implements represented a value not measurable by any reach of wild territory. A metal kettle, a spear, a knife, a hatchet, transformed the whole life of a savage.'" [2] So eager were the natives for the goods of the traders that they are reported to have ripped up their clothing, made of the finest otter skins, in order to effect an exchange.[3]

Not only is there no positive correlation here between archaeological cultures and ethnic groups, but it is, in fact, impossible to fix with certainty the tribal identity of the people met in this region by the first white explorers, John Verrazzano and Henry Hudson.

History records the advent of no white man to the confines of the present New York state, prior to that of the former, an Italian navigator seeking the fabled westward passage to the "rich kingdom of Cathay." The authenticity of his voyage, briefly described in a letter written to his king, Francis the First of Italy, from Dieppe, on July 8, 1524, of which only a translation printed in 1556 exists, has been questioned by Murphy[4] and others, but Parkman concludes that "the difficulties of incredulity appear greater than those of belief."[5]

On the 17th of January, 1524, Verrazzano is supposed to have departed from near Madeira and 49 days later to have beheld, as he says, "a new country, which had never before been seen by any one, either in ancient or modern times." [6]

Sailing northward he came at length into what may have been the Bay of New York, and ascended with a small boat Bayonne Bay (?), "upon which they [the Indians] were rowing thirty or more of their small boats, from one shore to the other, filled with multitudes who came to see us." [7]

This is unfortunately his only statement concerning the natives, thought by Brinton to have been the Lenapé,[8] encountered at this point of the voyage, but he provides a rather full description of the inhabitants at his next stopping place, possibly Newport harbor in Narragansett Bay,[9] which may be worth quoting at some length for comparison with the later and better authenticated accounts of Hudson's discoveries.

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[1]Harrington (1924) describes a possible instance of this sort, although it is not clear that the few colonial articles from the topsoil relate in any way to the archaeological material below (p. 246).

[2]Hunt, 1939, p. 19.

[3]O'Callaghan, 1850, p. 36.

[4]Murphy, 1875.

[5]Parkman, 1903, p. 197.

[6]Murphy, 1875, p. 171, cf. translation by Cogswell, 1841, pp. 41-67.

[7]Ibid., p. 176.

[8]Brinton, 1885, pp. 42-43.

[9]Parkman, 1903, p. 199.

"Among them [the Indians who came aboard] were two kings more beautiful in form and stature than can possibly be described; one was about forty years old, the other about twenty-four, and they were dressed in the following manner: The oldest had a deer's skin around his body, artificially wrought in damask figures,[1] his head was without covering, his hair was tied back in various knots; around his neck he wore a large chain ornamented with many stones of different colours. The young man was similar in his general appearance. This is the finest looking tribe, and the handsomest in their costumes, that we have found in our voyage. They exceed us in size, and they are of a very fair complexion; some of them incline more to a white, and others to a tawny colour; their faces are sharp, their hair long and black, upon the adorning of which they bestow great pains; their eyes are black and sharp, their expression mild and pleasant, greatly resembling the antique. I say nothing to your Majesty of the other parts of the body, which are all in good proportion, and such as belong to well-formed men. Their women are of the same form and beauty, very graceful, of fine countenances and pleasing appearance in manners and modesty; they wear no clothing except a deer skin, ornamented like those worn by the men; some wear very rich lynx skins upon their arms, and various ornaments upon their heads, composed of braids of hair, which also hang down upon their breasts on each side. Others wear different ornaments, such as the women of Egypt and Syria use. The older and the married people, both men and women, wear many ornaments in their ears, hanging down in the oriental manner. We saw upon them several pieces of wrought copper, which is more esteemed by them than gold, as this is not valued on account of its colour, but is considered by them as the most ordinary of the metals --yellow being the colour especially disliked by them; azure and red are those in highest estimation with them. Of those things which we gave them, they prized most highly the bells, azure crystals, and other toys to hang in their ears and about their necks; they do not value or care to have silk or gold stuffs, or other kinds of cloth, nor implements of steel or iron. When we showed them our arms, they expressed no admiration, and only asked how they were made; the same was the case with the looking-glasses which they returned to us, smiling, as soon as they had looked at them. They are very generous, giving away whatever they have.[2]

"The animals, which are in great numbers, as stags, deer, lynxes, and many other species, are taken by snares, and by bows, the latter being their chief implement; their arrows are wrought with great beauty, and for the heads of them, they use emery, jasper, hard marble, and other sharp stones, in the place of iron. They also use the same kind of sharp stones in cutting down trees, and with them they constructed their boats of single logs, hollowed out with admirable skill and sufficiently commodious to contain ten or twelve persons; their

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[1]Elaborately painted skins are subsequently referred to by Wassenaer who, describing a large shipment of fine otter skins which had arrived in Amsterdam, says: "They were the product of Canada and the circumjacent places. The tribes are in the habit of clothing themselves with them; the fur or hair inside, the smooth sides without, which, however, they paint so beautifully that, at a distance, it resembles lace." (O'Callaghan, 1850, p. 36.)

[2]Murphy, 1875, pp. 177-178.

oars are short, and broad at the end, and are managed in rowing by force of the arms alone, with perfect security, and as nimbly as they choose. We saw their dwellings, which are of a circular form, of about ten or twelve paces in circumference, made of logs split in halves, without any regularity of architecture, and covered with roofs of straw, nicely put on, which protect them from wind and rain."[1]

"They change their habitations from place to place as circumstances of situation and season may require; this is easily done, as they have only to take with them their mats, and they have other houses prepared at once. The father and the whole family dwell together in one house in great numbers; in some we saw twenty-five or thirty persons. Their food is pulse, as with the other tribes, which is here better than elsewhere, and more carefully cultivated; in the time of sowing they are governed by the moon, the sprouting of grain, and many other ancient usages. They live by hunting and fishing, and they are long-lived. If they fall sick, they cure themselves with medicine, by the heat of the fire, and their death at last comes from extreme old age. We judge them to be very affectionate and charitable towards their relatives--making loud lamentations in their adversity, and in their misery calling to mind all their good fortune. At their departure out of life, their relations mutually join in weeping, mingled with singing, for a long while."[2]

The next explorer whose exploits are pertinent to our subject is the English navigator, Henry Hudson. Sailing for the Dutch West India Company in search of the western passage, he brought his little vessel, the Half Moon, into the mouth of the river named in his honor, on September 3, 1609. By the 18th of the same month he had reached, after several stops and contacts with the natives, the head of navigation near the present site of Albany, whence, realizing the frustration of his plans, he began his homeward departure on the 23rd.

From Robert Juet's journal of the voyage we learn that his first meeting with the Indians occurred on September 5 (probably near the Narrows[3]). His men, going ashore, met there "great store of men, women and children, who gave them tobacco at their coming on land."[4] Some came on board ship bringing dried "currants" (grapes ?) and clad "in mantles of feathers and some in skins of divers sorts of good furs,"[5] some women also in "hemp."[6] "They had red copper tobacco pipes and other things of copper they did wear about their necks."[7]

On the 12th, while still somewhere on the lower Hudson, "there came eight and twenty canoes full of men, women and children to betray us: but we saw their intent, and suffered none of them to come aboard of us. At twelve of the clock they departed. They brought with them oysters and beans whereof we bought some. They have great tobacco pipes of yel-

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[1]Murphy, 1875, pp. 179-180.

[2]Ibid., p. 180.

[3]Ruttenber, 1872, p. 8.

[4]Juet, 1610 (trans. 1811, p. 135).

[5]Ibid., p. 135.

[6]This evidently refers to bast fiber, twisted and woven (see p. 66).

[7]Juet, 1610 (trans. 1811, p. 135).

low copper[1] and pots of earth to dress their meat in."[2] While probably in the vicinity of Catskill they met "very loving people and very old men: where we were well used."[3]

De Laet[4] has preserved several important passages from the lost journal of Hudson, in the chief of which he states: "When I came on shore the swarthy natives all stood around, and sung in their fashion; their clothing consisted of the skins of foxes and other animals, which they dress and make the skins into garments of various sorts. Their food is Turkish wheat [maize] which they cook by baking and it is excellent eating. They all came on board one after another in their canoes, which are made of a single hollowed tree; their weapons are bows and arrows, pointed with sharp stones, which they fasten with hard resin. They had no houses, but slept under the blue heavens, sometimes on mats of bulrushes interwoven, and sometimes on the leaves of trees. They always carry with them all their goods, such as their food and green tobacco, which is strong and good for use. They appear to be a friendly people, but have a great propensity to steal, and are exceedingly adroit in carrying away whatever they take a fancy to."[5]

When probably near the present city of Hudson, he "sailed to the shore in one of their canoes with an old man, who was the chief of a tribe consisting of 40 men and 17 women; these I saw there in a house well constructed of oak bark, and circular in shape, so that it had the appearance of being built with an arched roof. It contained a great quantity of maize or Indian corn and beans of last year's growth, and there lay near the house for the purpose of drying enough to load three ships, beside what was growing in the fields. On our coming into the house, two mats were spread out to sit upon, and immediately some food was served in well made red wooden bowls; two men were also dispatched at once with bows and arrows in quest of game, who soon after brought in a pair of pigeons which they had shot. They likewise killed a fat dog and skinned it in great haste with shells which they had got out of the water. They supposed that I would remain with them for the night, but I returned after a short time on board the ship. The land is the finest for cultivation that I ever in my life set foot upon, and it also abounds in trees of every description. The natives are a very good people, for when they saw that I would not remain, they supposed that I was afraid of their bows, and taking the arrows, they broke them in pieces and threw them into the fire."[6]

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[1]This is Juet's second reference to copper pipes. Since in the same sentence he refers to "pots of earth" it seems unlikely that he confused the two substances. Verrazzano also mentions "wrought copper" among the Indians, possibly of Narraganset Bay. Archaeological objects of this metal are decidedly rare in the Hudson Valley and the suspicion is aroused that the articles indicated were of sheet copper or brass, like those found abundantly on Iroquois sites of the early seventeenth century. The source of the first sheet metal may have been desultory trade contacts along the upper New England and Nova Scotian coasts, incidental to the well established fishing enterprises of the Spanish, French and Portuguese, in the first half of the sixteenth century (see Parkman, 1903, p. 191 ff.).

[2]Juet, 1610 (trans. 1811, p. 137).

[3]Ibid., p. 138.

[4]de Laet, 1625 (quoted from N. Y. Hist. Soc. Coll., Series 2, Vol. 1, 1841).

[5]Ibid., op. cit., pp. 299-300.

[6]Ibid., p. 300.

Unhappily, the early Dutch historians, Wassenaer, de Laet, De Vries, and Van der Donck, of whom the latter two made direct observations among the Indians, have left us for the most part only general accounts of the appearance, manners, and devices of the Hudson Valley inhabitants. In fact, they have usually failed to indicate whether the subjects of their discourse were the Algonquian "River Tribes" or the Mohawk west of Fort Orange (founded 1614 on present site of Albany). Van der Donck, as Sheriff of the Colony of Rensselaerwyck (established 1630), arrived at Fort Orange in 1642, resided there several years, and later had an estate near what is now the city of Yonkers.[1] His two accounts[2] seem to refer very largely to the Mohawk, an opinion strengthened by close comparison with one of our earliest accounts of this people, written by the Rev. Johannes Megapolensis, Jr.,[3] a contemporary of Van der Donck.

De Vries, on the other hand, sojourned briefly at Fort Orange, and his description of this part of his voyage is mainly "conveyed" from the account of Megapolensis.[4] His writings on the Algonquian Indians near Staten Island are pertinent to our subject and are quoted below. The statements of De Laet and Wassenaer, composed some twenty-five years earlier from the documents of various voyagers, probably deal largely with the tribes of the North (Hudson) River, below Fort Orange. In any event they are quite general.

Says de Laet, "The barbarians being divided into many nations and people, differ much from one another in language though very little in manners."[5] "Their clothing is composed of the skins of wild animals, especially beavers, foxes, and the like, sewed together in the manner of savages, with which they cover themselves entirely in winter and slightly in summer. Their food principally consists of maize or Indian corn, from which they bake cakes resembling bread; fish, birds and wild game. Their weapons are bows and arrows; the latter pointed with sharp flint stones or the bones of fishes. Their boats are one piece of wood, hollowed out by fire from the solid trunks of trees. Some of them lead a wandering life in the open air with no habitations; lying stretched upon the ground or on mats made of bulrushes, they take both their sleep and food, especially in summer, when they go nearer to the sea for the sake of fishing. Others have fixed places of abode, and dwellings built with rafters in the form of an oven, covered above with the bark of trees, so large that they are sufficient for several families. Their household furniture is mean and scanty, consisting of mats and wooden dishes,[6] together with hatchets made of hard flint stone by dint of savage labor, and tubes for

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[1]N. Y. Hist. Soc. Coll., Series 2, Vol 1, 1841, pp. 126-128.

[2]Van der Donck, 1650 (N. Y. Hist. Soc. Coll., Series 2, Vol. 2, 1849, pp. 251-338; Jameson, 1909, pp. 293-354); 1655 (N. Y. Hist. Soc. Coll., Series 2, Vol. 1, 1841, pp. 135-242).

[3]Megapolensis, 1644 (Jameson, 1909, pp. 168-180).

[4]Jameson, 1909, footnote to p. 207.

[5]de Laet, 1625 (1633 and 1640 editions) (N. Y. Hist. Soc. Coll., Series 2, Vol. 1, 1841, p. 312).

[6]This part of the description is obviously from the lost journal of Hudson, previously quoted from de Laet. The reference to a "wandering life in the open air with no habitations" doubtless refers to their summer fishing excursions.

smoking tobacco formed likewise of flint stone ingeniously perforated,[1] so that it is surprising how, in so great a want of iron implements they are able to carve the stone. They neither know nor desires riches."[2]

"They have no sense of religion, no worship of God; they indeed pay homage to the devil, but not so solemnly nor with such ceremonies as the Africans do. They call him in their language Memutto or Menetto, and whatever is wonderful and seems to exceed human capacity they also call Menetto."[3]

"They have no form of political government, except that they have their chiefs whom they call sackmos and sagmos, who are almost always the heads of families, for they rarely exceed the limits of one family connection."[4]

From Wassenaer[5] we learn that "among these almost barbarous people, there are few or none cross-eyed, blind, crippled, lame, hunch-backed or limping;[6] all are well fashioned people; strong in constitution of body, well proportioned, without blemish."[7]

"It is worthy of remark that so great a diversity of language exists among the numerous tribes. They vary frequently not over 5 or 6 miles;[8] forthwith comes another language; they meet and can hardly understand one another. There are some who come 60 miles from the interior and can not well understand those on the river."[9]

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[1]This interesting reference to tubular smoking pipes is the only documentary evidence found by the writer. Such pipes, not however of "flint," are an archaeological feature of the Coastal Aspect.

[2]de Laet, op. cit., p. 312.

[3]Ibid., op. cit., p. 312.

[4]Ibid., p. 312. Manito signifying "the mysterious and unknown potencies and powers of life and of the universe" (Handbook of American Indians, Bureau Am. Eth., Bull. 30, Pt. 1, 1907, pp. 800-801) and sagamore, meaning chief or ruler (ibid., Pt. 2, 408) are both Algonquian terms. Without doubt de Laet's account applies to the "River Indians." Although the author seems never to have visited New Netherland, he was a scholar of repute and had the manuscript journals of "divers captains and navagators" before him as he wrote. (N. Y. Hist. Coll., Series 2, Vol. 1, 1841, pp. 282-288; Jameson, 1909, pp. 31-35).

[5]Wassenaer, 1624-26 (Documentary History of New York, Vol. III, E. B. O'Callaghan, ed., Albany, 1850, pp. 27-48; Jameson, 1909, pp. 67-86). Like de Laet, Wassenaer never came to the New World. His journalistic writings on the New Netherland of 1623-1630 are based wholly on reports which he received and edited in scholarly fashion (Jameson, 1909, pp 63-66).

[6]There is ample evidence from bony lesions to show the presence in prehistoric New York of several disease entities. For example kyphotic spines (hump-back) are known from the Point Peninsula, Owasco, and Iroquois occupations; arthritis was a common ailment; and there are two instances of probable multiple myeloma (bone marrow tumor) (Ritchie and Warren, 1932; Williams, Ritchie, and Titterington, 1941).

[7]Wassenaer, op. cit., p. 32.

[8]The Dutch mile is equivalent to 3 and a fraction English miles.

[9]Wassenaer, op. cit., p. 32. (This statement probably refers to the Mohawk.)

"The dwellings are commonly circular; with a vent hole above to let out the smoke; closed with 4 [?] doors, consisting most of the bark of trees which are very abundant there. They sleep on the ground covered with leaves and skins."[1]

"They live in summer mostly on fish."[2] "The arrows they use are pointed with little bones, iron [?] or copper, with which they are very expert, being good marksmen. They catch deer, fawns, hares and foxes and all such."[3] "Their dogs are small."[4]

"The natives are always seeking some advantage by thieving. The crime is seldom punished among them. If any one commit that offense too often he is stript bare of his goods, and must resort to other means another time. The husband who abandons his wife without cause must leave all hers [goods]; in like manner the wife the husband's. But as they love the children ardently, these are frequently the cause of their coming together again. The girls allow their hair to be cut all around, like the priests, when they are unwell for the first time. They work apart from all the men in a separate house, where food is furnished them on a stick. They remain there in until they are sick a second time. Then they make their appearance abroad again, and are allowed to marry. They then dress their hair, which before they would not touch. The married women let their hair grow to the waist and smear it with oil. When they are unwell they do not eat with their husbands and they sup their drink out of the hand. The men let the hair grow on one side of the head for a braid; the rest is cut off."[5]

"Chastity appears, on further inquiry, to hold a place among them, they being unwilling to cohabit with ours, through fear of their husbands. But those who are single evince every friendly disposition. Further information is necessary."[6]

"When a lad courts a girl, he buys her generally in a neighboring village, and this done, the daughter is then delivered to him by two or three other women, who come carrying on their heads meal, roots, corn and other articles to the young man's hut, and he receives her."[7] "It is very common among them for one man to buy and to have many wives, but not in one place; when he journeys 5 or 6 miles he finds another wife who also takes care of him; 5, or 10 miles farther, he again finds another wife who keeps house and so on to several; commonly buying up peltries through the country."[8]

"There is some respect paid to those in authority amongst them; but these are no wise richer than others. There is always so much ado about them that the chief is feared and obeyed as long as he is near, but he must shift for himself like the others. There is

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[1]Wassenaer, op. cit., p. 30.

[2]Ibid., p. 30.

[3]Ibid., p. 30.

[4]Ibid., p. 40.

[5]Ibid., p. 44.

[6]Ibid., p. 41.

[7]Ibid., p. 30.

[8]Ibid., p. 30. (This practice suggests a post-European expedient.)

nothing seen in his house more than in those of the rest."[1] "They have a chief in time of war named sacjama [sachem]."[2]

"When they [Mahicans] have a corpse, they place it, in the act of dying, squat on the heels, like children sitting in this country before the fire; and so lay it in the grave, all sitting, its face to the east."[3]

"The belief of the Maikans [Mahicans] regarding the separation of the soul is, that it goes up westward on leaving the body. There 'tis met with great rejoicing by the others who died previously; there they wear black otter or bear skins, which among them are signs of gladness. They have no desire to be with them."[4]

For the clearest description definitely pertaining to Algonquian tribes we are indebted to De Vries,[5] who says, "I will state something of the nations about Fort Amsterdam; as the Hackinsack, Tapaen, and Wicquasgeck [Wecquaesgeek] Indians:[6] and these are located at some two, three, or four leagues from the entrance of the river. Their manner of living is for the most part like that of those at Fort Orange; who, however, are a stronger, and a more martial nation of Indians--especially the Maquas [Mohawk], as before mentioned, who hold most of the others along the river to Fort Amsterdam under tribute. The Indians below here are also tolerably stout, have black hair, with a long lock, which they braid and let hang on one side of the head. The hair is shorn on the top of the head like a cock's-comb. Their disposition is bad. They are very revengeful; resembling the Italians. Their clothing is a coat of beaver skins over the body, with the fur inside in winter, and outside in summer; they have, also, sometimes a bear's hide, or a coat of the skins of wild cats, or hesspanen (raccoon), which is an animal almost as hairy as a wild cat, and is also very good to eat. I have frequently eaten it, and found it very tender. They also wear coats of turkey's feathers, which they know how to plait together; but since our Netherland nation has traded here, they trade their beavers for duffels cloth, which we give for them, and which they find more suitable than the beavers, as they consider it better for the rain; and take two and a half in length of duffels, which is nine and a half quarters wide. Their pride is to paint their faces strangely with red or black lead, so that they look like fiends. They are then valiant; yea, they say they are Mannette, the Devil himself. Some of the women are very well-featured, and of tall stature. Their hair hangs loose from their head; they are very foul and dirty; they some-

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[1]Wassenaer, op. cit., p. 41.

[2]Ibid., p. 40.

[3]Ibid., p. 46.

[4]Ibid., p. 45.

[5]De Vries, 1655. (Jameson, 1909, pp. 186-234). De Vries was associated with Johan de Laet Kiliaen van Renssalaer, and several others in a patroonship on the South or Delaware River. Between 1633-36 and 1638-44 he was on Manhattan and Staten Islands, attempting to plant settlements on the latter. In 1644 he returned to Holland and wrote of his adventures (Jameson, 1909, pp. 183-185).

[6]The first two are thought to have belonged to the Unami division of the Lenapé, the last to the Wappinger confederacy.

times paint their faces, and sometimes draw a black ring around their eyes. When they wish to cleanse themselves of their foulness, they go in the autumn, when it begins to grow cold, and make, away off, near a running brook, a small oven, large enough for three or four men to lie in it. In making it they first take twigs of trees, and then cover them tight with clay, so that smoke cannot escape. This being done, they take a parcel of stones, which they heat in a fire, and then put in the oven, and when they think that it is sufficiently hot, they take the stones out again, and go and lie in it, men and women, boys and girls, and come out so perspiring, that every hair has a drop of sweat on it. In this state they plunge into the cold water; saying that it is healthy, but I let its healthfulness pass; they then become entirely clean, and are more attractive than before. The girls consider themselves to have arrived at womanhood when they begin to have their monthly terms, and as soon as they have them, they go and disguise themselves with a garment, which they throw over their body drawing it over the head so that one can barely see their eyes, and run off for two or three months, lamenting that they must lose their virginity; but for all that they do not omit their diversions at night, or other unseasonable time. This period being over, they throw away their disguise, and deck themselves with a quantity of zeewan [wampum] upon the body, head and neck; they then go and sit in some place, in company with some squaws, showing that they are up for a bargain. Whoever courts best and gives the most zeewan takes her home with him, and remains with her sometimes three or four months, and then goes with another; sometimes a single month, according as they are inclined to each other. The men are not jealous, and even lend their wives to a friend. They are fond of meetings, frolic and dance much; but the women are compelled to work like asses, and when they travel, to carry the baggage on their backs, together with their infants, if they have any, bound to a board."[1]

"The food supplies are various. The principal one is maize, which is their corn, and which is called by us Turkish wheat. They pound it in a hollow tree. When they travel, they take a flat stone, and pound it with another stone placed upon the first, and when it is pounded, they have little baskets, which they call notassen, and which are made of a kind of hemp, the same as fig-baskets--which they make so neatly that they serve them as sieves--and thus make their meal. They make flat cakes of the meal mixed with water, as large again as a farthing cake in this country, and bake them in the ashes, first wrapping a vine-leaf or maize-leaf around them. When they are sufficiently baked in the ashes, they make good palatable bread. The Indians also make use of French beans of different colors, which they plant among their maize, or, as we call it, Turkish wheat. When the maize (which is sown three or four feet apart, in order to have room to weed it thoroughly) is grown two or three feet high they stick the beans in the ground alongside of the maize-stalks, which serve instead of the poles which we use in our Fatherland, for beans to grow on. In New Netherland, the beans are raised on the maize-stalks, which grow as high as a man can reach, and higher, according to the fertility of the soil. There are also pumpkins, water-melons, and melons. They dry the nuts of trees, and use them for food. There are also ground-nuts as in this country; and white ground-nuts, but these are poisonous to eat--a mason of the Com-

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[1]Jameson, 1909, pp. 216-218.

pany having died in consequence of eating one of them. There also grow here hazel-nuts, large nuts in great quantities, chestnuts, which they dry to eat, and wild grapes in great abundance, which they also use."[1] --"and the savages use a kind of hemp, which they understand making up, much stronger than ours is, and for every necessary purpose, such as notassen, (which are their sacks, and in which they carry everything); they also make linen of it.[2] They gather their maize and French beans the last of September and October, and when they have gathered and shelled the corn, they bury it in holes, which they have previously lined with mats, and so keep as much as they want for the winter and while hunting. They sow the maize in April and May."[3]

"There are great quantities of harts and hinds, which the savages shoot with their bows and arrows, or make a general hunt of, a hundred more or less joining in the hunt. They stand a hundred paces more or less from each other, and holding flat thigh-bones in the hand, beat them with a stick, and so drive the creatures before them to the river. As they approach the river, they close nearer to each other, and whatever is between any two of them, is at the mercy of their bows and arrows, or must take to the river. When the animals swim into the river, the savages lie in their canoes with lassos, which they throw around their necks, and tighten, whereupon the deer lie down and float with the rump upwards, as they cannot draw breath."[4]

"There are great numbers of two kinds of geese, which stay here through the winter, by thousands, and which afford fine sport with the gun. One kind is the gray geese, which weigh fifteen or sixteen pounds each; the other they call whiteheads, weighing six or seven pounds, very numerous, flying by thousands, and of good flavor. There are large quantities of bernicles, which keep along the saltwater shore, and of gulls, small star-birds, snipes, curlews, and many other shore-birds, which I cannot give the names of. The geese and bernicles come here in September and leave in April. Many of the savages say that they go to the river of Canada, where they breed their young; for the fishermen who sail to Newfoundland find them there in great numbers in the summer time, when they are fishing there. On the fresh water are many swans. Land birds are also very numerous, such as wild turkeys, which weigh from thirty to thirty-six and forty pounds, and which fly wild, for they can' fly one or two thousand paces, and then fall down, tired with flying, when they are taken by the savages with their hands, who also shoot them with bows and arrows. Partridges are numerous, but they are small. There are meadow-hens, [heath hens ?] as large as a year-old hen, and with feathers like those of a partridge; and white and gray herons in great numbers. Nothing is wanted but good marksmen with powder and shot. Turtle-doves [passenger pigeons], at the time of year when they migrate, are so numerous, that the light can hardly be discerned where they fly. There are white and gray cranes, and a species of black bird, as large as

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[1]Jameson, 1909, pp. 218-219.

[2]See p. 66 and Plate 40, figs. 1-6. Until recently the Iroquois made bags and baskets of this kind.

[3]Jameson, 1909, pp. 219-220.

[4]Ibid., p. 220.

what is called in our country the starling or thrush, and which makes its appearance at harvest, when the corn named maize is ripe."[1]

"The fish (striped bass) comes from the sea into the river in the spring, about the last of March and April, and continues until the last of May. It is caught in large quantities and dried by the savages, for at this time the squaws are engaged in sowing their maize, and cultivating the land, and the men go a-fishing in order to assist their wives a little by their draughts of fish. Sometimes they catch them with seines from seventy to eighty fathoms in length, which they braid themselves, and on which, in place of lead, they hang stones, and instead of the corks which we put on them to float them, they fasten small sticks of an ell in length, round and sharp at the end. Over the purse, they have a figure made of wood, resembling the Devil, and when the fish swim into the net and come to the purse, so that the figure begins to move, they then begin to cry out and call upon the Mannetoe, that is, the Devil, to give them many fish. They catch great quantities of this fish; which they also catch in little set-nets, six or seven fathoms long, knit single like a herring-net. They set them on sticks into the river, one, and one and a half fathoms deep. With these they catch many of this fish. There is also another kind of fish on the seacoast, which is called thirteen (drum-fish) by us, because it is larger than the twelve (striped bass). The scales of the thirteen are yellow like those of the carp, to which it is not unlike in shape. It is of the size of a codfish. Herring also come into the river. There is a species of fish caught on the shore, called by us stone-bream, and by the English schip-heet, that is to say, sheep's-head, for the reason that its mouth is full of teeth, above and below, like a sheep's head. Sturgeon are numerous in the brackish water, and as high up in the fresh water as Fort Orange. There are many kinds of fish which we have not in our Fatherland, so that I cannot name them all. In the fresh waters, are pike, perch, roach, and trout. There are fine oysters, large and small, in great abundance. In the summer-time crabs come on the flat shores, of very good taste. Their claws are of the color of the flag of our Prince, orange, white and blue (blue crab) so that the crabs show sufficiently that we ought to people that country, and that it belongs to us."[2]

"They make a large grave, and line it inside with boughs of trees, in which they lay the corpse, so that no earth can touch it. They then cover this with clay, and form the grave, seven or eight feet high, in the shape of a sugar-loaf, and place palisades around it. I have frequently seen the wife of the deceased come daily to the grave, weeping and crying, creeping around it with extended body, and grieving for the death of her husband. The oldest wife by whom he has had children does this; if he has also had a young wife, she does not make much ado about it, but looks out for another husband. They give a party when any one is dead in the house."[3]

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[1]Jameson, 1909, p. 221.

[2]Ibid., pp. 222-223.

[3]Ibid., p. 223.

The Prehistoric Cultures of New York

Iroquois Aspect, Upper Phase, Mississippi Pattern

From this historical abstract, which illuminates but faintly the prehistoric vista, we approach our main objective, a survey of the present status of archaeological knowledge. In the foreground looms the relatively clear configuration of Iroquois culture, pertaining to late prehistoric and historic times in New York. Important as it is both to historian and prehistorian, it lies beyond the scope of this work.

In briefest outline, for comparative purposes, the salient criteria of precontact Iroquois culture may be enumerated as follows: rectangular, communal, bark "long house", usually constructed within a palisade on high land remote from a large waterway; food storage in deep U-shaped pits lined with bark and in bark barrels and bast bags; large dependence on corn, beans, and squashes; high development of ceramic and bone industries; projectile points predominantly small isosceles triangles, made from spalls; thick-polled stone celts and adzes; pottery and stone pipes of trumpet type; conoidal or vase-shaped stone pipes (most common among western groups); grit-tempered (rarely shell-tempered), well-levigated and-fired pottery vessels of globular shape with rounded base and constricted neck, usually with thickened rim or definite collar, commonly bearing rim points or castellations, and having a circular or rectangular mouth. The body is prevailingly smooth, but is sometimes corrugated by means of a fabric-or cord-wrapped paddle. Decoration is commonly confined to the neck and rim or collar, and consists of simple triangle complexes, usually the chevron, applied by incised technique. Notching at the base of the rim or collar is the usual treatment.

Flexed or bundle burial in cemeteries, with ossuary burial among the Huron, Neutral and Erie, was practiced. Grave goods are very rare, and when present usually consist of pipes, tubular bone beads, bone awls, celts, and arrowpoints.[1]

Important negative elements of Iroquois culture include burial mounds, cremation,[2] copper artifacts, discoidal stones, the gouge, grooved axe, cylindrical pestle (very rare on early sites), plummet, and the slate "problematical" forms.

According to Skinner,[3] two main groups of the Iroquois may be differentiated on cultural grounds, viz., the western group, consisting of the Neutral, Erie, Seneca, Cayuga, and the Conestoga or Andaste; and the eastern group, comprising the Tionontati or Tobacco Nation, Huron, Mohawk, Onondaga, and Oneida. The tribal divisions of this eastern group apparently crystallized in late prehistoric times and most of their culture is of post-European development. Wintemberg[4] finds that only the Neutral culture exhibits periods of development, viz., an archaic, transitional, and late pre-European.

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[1]This phase of the mortuary complex is radically different in historic times. For obscure reasons, beginning with the earliest contact, grave goods were lavished upon the dead.

[2]One instance of partial cremation, evidently intentional, was found by the writer on a pre-contact site near Avon, in the Genesee Valley.

[3]Skinner, 1921, p. 70.

[4]Wintemberg, 1931, p. 67.

It is generally agreed that the western group was parental to the eastern, the current theory[1] being that a large detachment separated from the main body while the latter was somewhere in the northeastern Ohio - northwestern Pennsylvania region, and proceeding around the west end of Lake Erie and across the Detroit River, settled in the Ontario Peninsula as the proto-Huron. Offshoots from this band, working eastward along the north shore of Lake Ontario and the St. Lawrence River as far as the gulf, were the predecessors of the Mohawk, some of whom were met by Cartier in 1534 at Hochelaga, on the present site of Montreal.[2] Sometime between then and Champlain's first visit in 1609 they had vacated this district, moving south, it is conjectured, through the Champlain-Hudson valleys to the lower Mohawk Valley, where they were encountered by the Dutch in the first quarter of the seventeenth century.

The closely affiliated Onondaga-Oneida tribes occupied in very late prehistoric times, a large number of populous settlements in the Rutland Hills section of Jefferson County, New York, from whence they migrated by an unknown route, but probably directly southward, to their protohistoric and later homes south and east of the present Syracuse.

Of the western group, the Neutral moved into western New York, occupying the territory from and including the eastern part of the Ontario Peninsula probably to the Genesee River; the Erie or Cat Nation held the southwestern part of New York and northern Ohio; while the Seneca and Cayuga, originally undifferentiated, pressed northward through the Genesee Valley, in which they left a whole series of hilltop forts and smaller open settlements. Before Caucasian contact their main villages had reached the foot of the western Finger Lakes at about which time the Cayuga are believed to have separated, going eastward to the valley of the lake which bears their name.

It remains to account for the Andaste. From scanty archaeological evidence it would appear that they migrated eastward through the mountainous country of northern Pennsylvania into the West Branch of the Susquehanna, reaching the main river in late prehistoric times.

While the culture of the northern Iroquois nations[3] exhibits considerable homogeneity, it is also obvious that developmental features, particularly in the ceramics, are ascertainable, and these, together with other cultural distinctions,[4] and the genesis of the entire complex,[5] constitute the principal problems in Iroquois archeology.[6] As a people, the Iroquois were in-

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[1]Parker, 1916, pp. 479-507.

[2]Wintemberg, 1927, pp. 251-254.

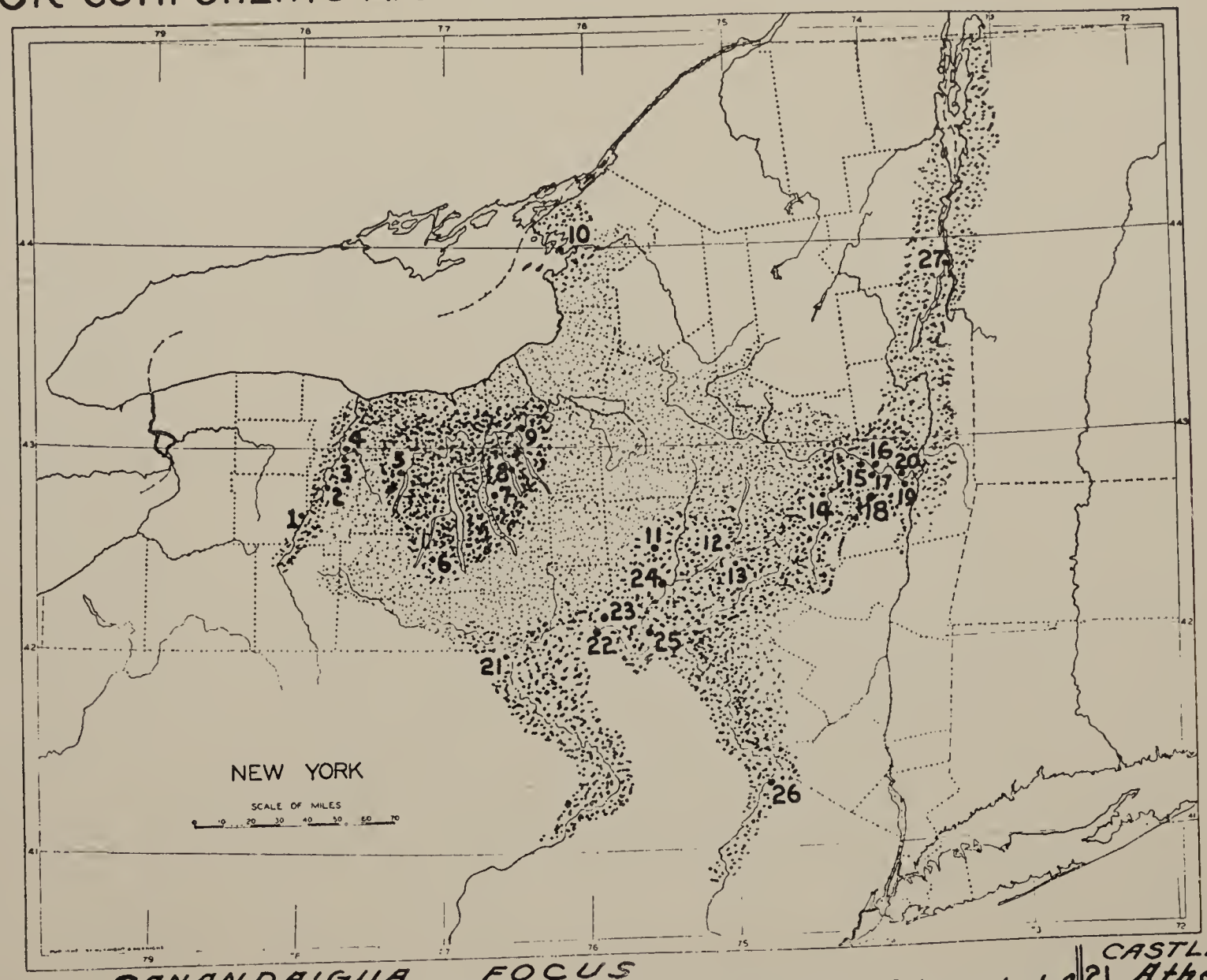
[3]As distinguished from the southern members of the Iroquoian family, the Tuscarora (the sixth nation of the confederacy about 1722), Nottaway, Meherrin, and Cherokee.

[4]The foci of the Iroquois Aspect, shown on Plate 1, are postulated on the assumption of tribal cultural differences. It may be necessary to condense the list after detailed comparative studies on the scattered and often poorly catalogued collections have been carried out.

[5]Dr. James B. Griffin (unpublished Ms.) suggests that the Iroquois complex developed in the lower Great Lakes area between 1200 and 1300 A. D. from a Woodland background, influenced by successive cultural waves from the Ohio Valley and Atlantic coast areas.

[6]Fenton has formulated five archeo-ethnic problems relating to the intrusive linguistic and cultural position of the Iroquois in the northeast which require investigation (1940, pp. 165-167).

MAJOR COMPONENTS AND DISTRIBUTION OF THE OWASCO ASPECT



CANANDAIGUA FOCUS

1. St. Helena, Wyoming Co.
2. Fall Brook, Livingston Co.
3. Golah (Klinke), Monroe Co.
4. Golah (Rapp), " "
5. Canandaigua, Ontario Co.
6. Waneta Lake, Schuyler Co.
7. Levanna, Cayuga Co.
8. Owasco Lake, Cayuga Co.
9. Jack's Reef, Onondaga Co.
10. Pillar Point, Jefferson Co.
11. Norwich, Chenango Co.
12. Wilbur Lake, Otsego Co.
13. Hilltop Workshop, Delaware Co.
14. Enders Site, Schoharie Co.
15. Turnbull Site, Schenectady Co.
16. Buried Village, " "
17. Stair Falls, " "
18. Big Dune, Albany Co.
19. Pottery Beach, " "
20. Frenchman's, Saratoga Co.

CASTLE CREEK FOCUS

21. Athens, Penna.
22. Willow Point (2 sites), Broome Co.
23. Castle Creek, " "
24. Bainbridge, Chenango Co.
25. Damascus, Broome Co.
26. Port Jervis, N.J.
27. Lake Champlain, (Headquarters), Essex Co.

Plate 6. Major Components and Distribution of the Owasco Aspect, Northeastern Phase, Woodland Pattern

habitants of rugged wooded country, preferring to dwell, at least in the prehistoric period, in marked contrast to most of their predecessors in the northeast, far from navigable streams. Whether this predilection reflected antecedent custom or arose from the expediency of a new people entering hostile territory is not yet clear.

Owasco Aspect, Northeastern Phase, Woodland Pattern

The historical method of approach, utilized as far as practicable in this dissertation, which is concerned almost entirely with cultures lying beyond the reach of history, requires consideration first of the Owasco Aspect, a major Woodland manifestation named from the component excavated by Parker in 1915,[1] which is situated in Lakeside Park, on the Owasco Lake outlet, Cayuga County (Plate 6, site 8, and pages 80, 83). Data from much subsequent investigation of other sites warrants assignment of the aspect to the late prehistoric period and strongly indicates its partial coevality with the Iroquois Aspect (see Plates 2, 4). It was probably the dominant occupation in New York at the time of, and for some centuries prior to, the first infiltration of Iroquois bands from the south and later north, as already stated.

Evidence for its stratigraphic relationship with the Pt. Peninsula Focus has come to light at Jack's Reef, Onondaga County (Plate 6, site 9, and pages 83 - 86), where a rich burial of the latter culture (Plate 69) was found in the subsoil, sealed beneath a deep unbroken mantle of refuse pertaining to the Canandaigua Focus of the Owasco Aspect. Iroquois connections are postulated upon typological considerations, for while pits and burials of both people have been opened on the same sites (Plate 6, site 22 (Clark), page 61; Plate 6, site 2, p. 75); their contemporaneity has not been established, a situation equally true if the discoveries opposite Minisink Island, Sussex County, New Jersey be closely analyzed.[2]

Camp, village, and workshop sites of the Owasco Aspect, often situated on hilltops a mile or more from navigable water, and sometimes palisaded, have been traced from the Genesee River in western New York to the Hudson and Lake Champlain valleys on the east, and southward into New Jersey and Pennsylvania through the courses of the Delaware and Susquehanna rivers. More than thirty stations, including small camp sites, have been explored with varying degrees of thoroughness by the Rochester Museum and other institutions and individuals, to be named when the sites are summarily described. Reference to the map of distribution, Plate 6, shows a marked concentration of occupation in the Finger Lakes region, eastern Mohawk area, valleys of the Susquehanna and confluent Chemung River on the west, and tributary Chenango and Unadilla rivers on the east, and the Delaware Valley. Significantly, components of the Castle Creek Focus (sites 21-27) are confined to the eastern portion of the culture range,[3] occurring mainly in the Delaware-Susquehanna drainage area where it is be-

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[1]Parker, 1922, pp. 340-342.

[2]Heye and Pepper, 1915.

[3]One pottery vessel partaking of Castle Creek characteristics was found on a small camp site near Lacona, Jefferson County, by Mr. Lewis Snyder of Lacona, New York.

Plate 7. Pottery Pipes of the Owasco Aspect

All are of the characteristic obtuse angle elbow form. Spur or boss at base of bowl present on many (see figs. 2, 11). From the Golah (Klink), Owasco Lake, Canandaigua, Levanna, and Fall Brook sites (Canandaigua Focus) and the Castle Creek, Bainbridge, and Willow Point (Roger Clark) sites (Castle Creek Focus).

1, plain, burial on Golah (Klink) site; 2, plain, Owasco Lake site; 3, plain, Canandaigua site; 4, plain, with beaded rim surmounting globular bowl, set almost at a right angle to the stem, Canandaigua site; 5, annular toothed-stamp decoration on bowl, Canandaigua site; 6, annular and herringbone designs executed with dentate stamp on bowl, Canandaigua site; 7, plain, beaded top bowl, stem trianguloid in section, side and top edges nicked, Levanna site; 8, ornamented with short incisions, Canandaigua site; 9, annular and filled triangle designs, in dentate-stamp work, Castle Creek site; 10, plain, bilaterally flattened bowl, Castle Creek site; 11, stem missing, bowl anteroposteriorily flattened, artistically embellished with linear and herringbone designs in pointillé work, Castle Creek site; 12, incised beaded bowl, decorated with rough chevrons of annular punctates, burial 7, Fall Brook site; 13, bowl line-encircled below rim, globular body chevron-decorated, all in fine dentate-stamp work, Canandaigua site; 14, mask-like human face effigy in intaglio on front and back of bowl, areas between covered with dentate-stamp impressions, Castle Creek site; 15, bowl somewhat angular and covered with herringbone design in dentate-stamp work, Canandaigua site; 16, has well-modeled human face in low relief on either side of bowl near base, terrace-like projection of bowl on upper part of stem, outlined with circular punctates, Bainbridge site; 17, has rude effigy of human face on all four sides of bowl, separated by groups of parallel dentate-stamped lines, Bainbridge site; 18, has well-executed tree frog effigy in relief on front and back of bowl, figures and sunken areas bear dentate-stamp impressions, Canandaigua site; 19, deeply collared, globular bowl, lines incised, grave near Throop, Cayuga Co., probably of Castle Creek Focus; 20, decoration very similar in design and execution to fig. 19, grave in Chenango Co., probably of Castle Creek Focus; 21, bowl elaborately decorated with fine pointillé work, burial A, pit 25, Roger Clark site, Willow Point, Broome Co.; 22, stem missing, plain, shell-tempered, conical protuberances at frontal base of bowl, which joined stem nearly at right angle, Canandaigua site; 23, fragmentary pipe, bowl and stem defective, basal projections similar to those of fig. 22, dentate-stamped, Canandaigua site.

Plate 8.

Restored Pottery Vessel
St. Helena Site
Canandaigua Focus, Owasco Aspect
Height 19 inches

Elongated, fabric-malleated body; conical base; constricted neck; straight rim; flat lip; cord-imprinted chevrons and cross-striated bands on rim.

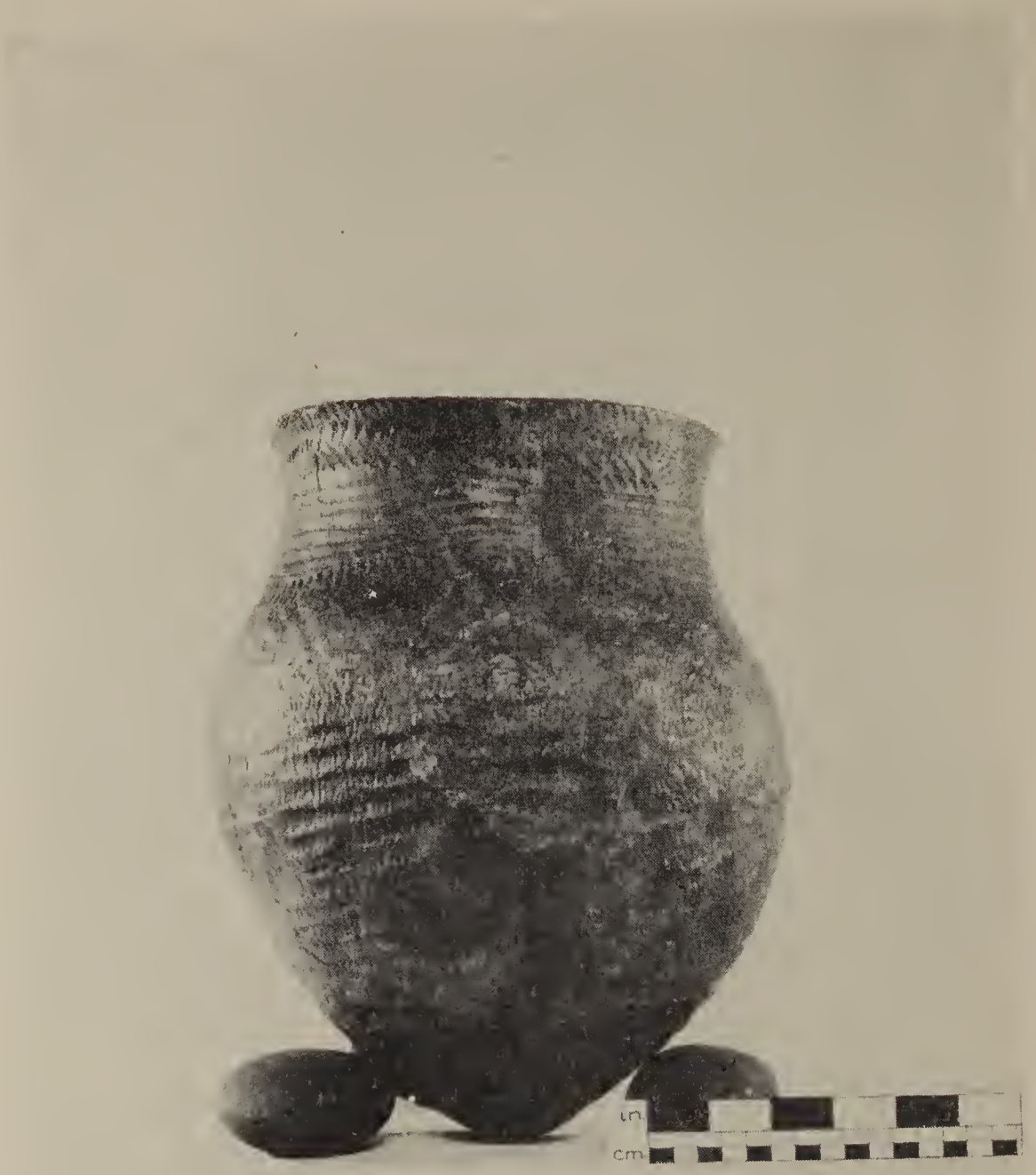

Plate 9. Restored Pottery Vessel
Levanna Site
Canandaigua Focus, Owasco Aspect

Elongated body; conoidal base; constricted neck; mildly everted rim; fabric-impressed, band and herringbone design in dentate-stamp technique.

lieved that Iroquois influence from proto-Andaste groups, drifting eastward across northern Pennsylvania, was first felt. In fact, from the abundance of Castle Creek remains in the Susquehanna Valley, as far south at least as the West Branch in Pennsylvania, and the occurrence over the same territory of stations of the almost certainly earlier Canandaigua Focus, as well as remains of the precontact Iroquois, one might, in the light of the typological correspondences to be described, suspect this region as the scene of the postulated transition of Castle Creek from Canandaigua Focus, under Iroquois inspiration.[1] On this assumption the weak Castle Creek manifestations along the Vermont shore of Lake Champlain[2] could better be explained in terms of gradual northeastward expansion or expulsion under Iroquois pressure exerted in lower New York, than as the result of a corresponding reaction within the existing Canandaigua Focus to Iroquois stimulus from the St. Lawrence, which in all probability came too late to be effective.

Owasco material culture as a whole is characterized by a weak polished stone industry; a relatively small inventory of chipped stone work of high quality, doubtless produced by pressure flaking; a well diversified bone and antler component, exhibiting skillful manipulation of these media by cutting, grinding, polishing and drilling; and an advanced ceramic complex. This embraces smoking pipes, almost exclusively of obtuse angle elbow type and frequently exhibiting a characteristic "elbow point" or small node at the basal junction of stem and bowl (Plate 7), and grit-tempered pottery vessels, surface-malleated with cord or fabric, of two general forms. The first type, characteristic of the Canandaigua Focus, has an elongated body, conoidal base, varying degree of neck constriction, and straight to moderately everted collarless rim (Plates 8, 9); the second, thus far confined exclusively to the Castle Creek Focus, while somewhat elongated, is a semiglobular or globular, round-bottomed receptacle, with marked neck constriction, straight to excessive degree of rim eversion and not infrequently an incipient to bold collar (Plates 10-14, 16). Other distinctions are present in the fictile fabric, that composing Canandaigua ware often being thicker, more coarsely tempered and friable than Castle Creek ware.

Similar techniques and motifs of ornamentation are found in both groups. In the main, the designs consist of simple rectilinear lines, often combined with the herringbone, chevron, rhomboid or plat composed of a vertical or oblique group of short parallel lines. These are

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[1]Based on a study of the large collection of Dr. T. B. Stewart, Lock Haven, Pennsylvania; numerous smaller collections in Pennsylvania, northern New Jersey, and southern New York; the exhibits of the Tioga Point Museum, Athens, Pennsylvania; and pottery illustrated by Christopher Wren (1914), in the museum of the Wyoming Geological and Historical Society, Wilkes-Barre, Pennsylvania.

[2]From a study of the archaeological collection of the University of Vermont, Burlington, Vt., and excavations by Champlain Valley Archaeological Society on a small site, where an entire vessel was found, near Ft. Ticonderoga, New York (Plate 6, site 27, page 71).

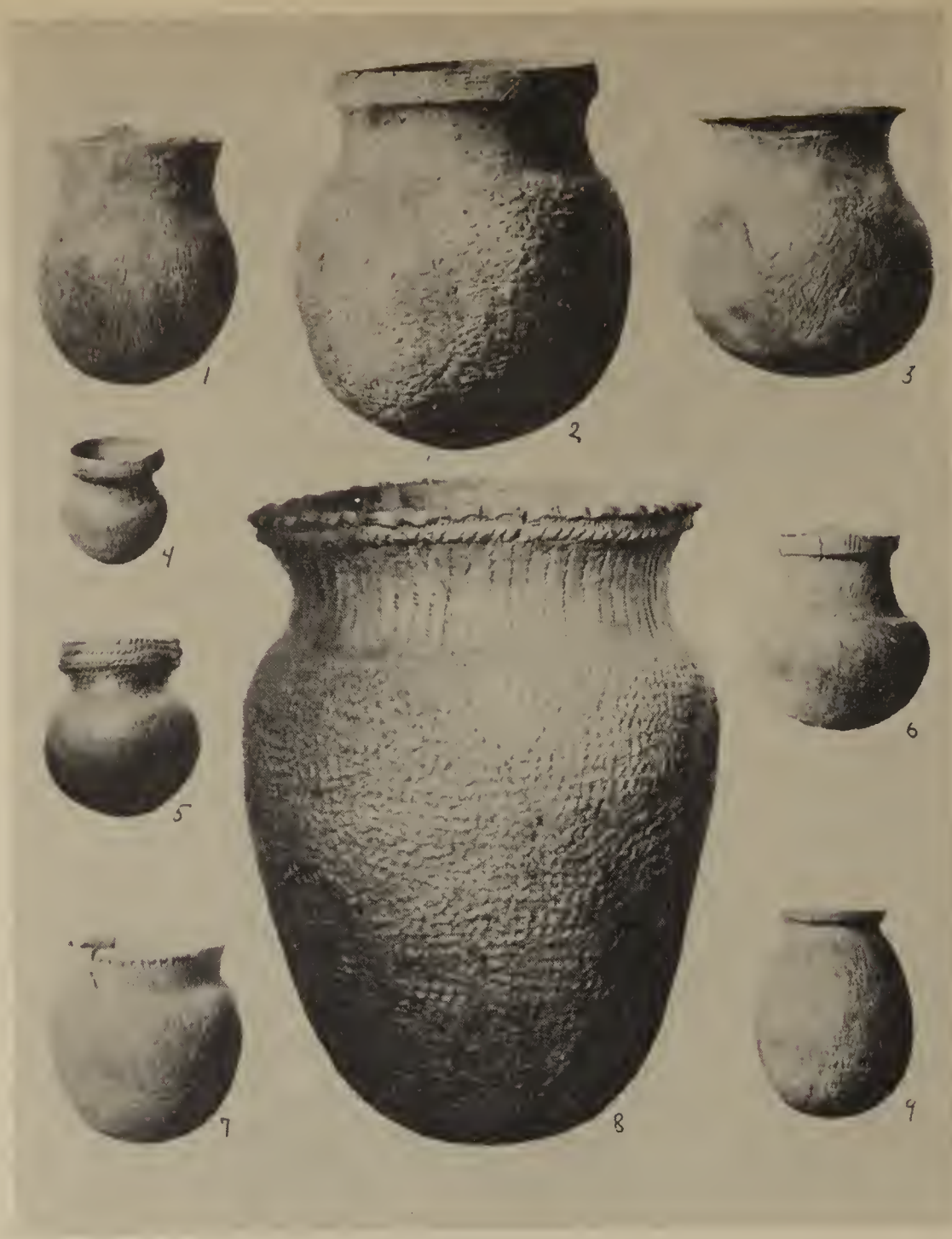

Plate 10. Pottery Vessels from Pits and Graves
Castle Creek Site
Castle Creek Focus, Owasco Aspect

All except figs. 4 and 6 restored. Height of fig. 8, 20 1/2 inches, others in proportion. All have rounded bases. Figs. 7 and 8 are from the same pit (no. 32).

1, elongated body, cord-malleated surface; constricted neck; everted rim; four bifurcated rim points; flat outsloping lip; 2, semiglobular body, fabric-roughened surface; constricted neck ornamented with oval dentate impressions in plat design; collar bears linear punctate impressions; rounded lip; 3, semiglobular body, cord-impressed surface; constricted neck; everted rim; flat vertical lip with circular dentate embellishment; rude incised chevrons on neck; 4, globular body, cord-impressed; much-constricted neck and prominent rounded collar; rows of triangular punctate impressions on neck and rim; rounded lip (with child burial, no. 10); 5 similar to fig. 4 in form and decoration; nodes on either side of rim projecting above lip; 6, elongated pot with depressed globular body; exceedingly long constricted neck and prominent collar with four castellations; body fabric-roughened; linear designs in dentate-stamp work on neck and rim; flat lip (with adult male burial, no. 28); 7, semiglobular, fabric (?)-malleated body; constricted neck; everted rim, bearing dentate-stamp and annular punctate impressions; incised chevrons on shoulder; 8, elongated, coarse fabric (?)-malleated body; constricted neck; everted, beaded, and scalloped rim; linear dentate-stamp decoration; outsloping lip; 9, elongated body, cord-roughened; constricted neck; narrow, punctate ornamented rim.

Photograph by Foster Disinger, Binghamton, New York. Reproduced by courtesy of Mr. Disinger and the Broome County Historical Society.

Collection of the Broome County Historical Society, Binghamton, New York.

Plate 11. Restored Pottery Vessel
Castle Creek Site
Castle Creek Focus, Owasco Aspect

Elongated cord-roughened body; rounded base; constricted neck embellished with all-over pattern of dentate-stamp impressions; flat outsloping lip.
Height 14 3/4 inches.

Plate 12. Restored Pottery Vessel
Castle Creek Site
Castle Creek Focus, Owasco Aspect
Height 11 inches

Semiglobular, fabric-malleated body; rounded base; smooth, constricted neck with incised chevron design; everted rim with weak castellations and linear dentate-stamp embellishment; flat outsloping lip.

Plate 13. Restored Pottery Vessel
Castle Creek Site
Castle Creek Focus, Owasco Aspect

Globular, fabric-roughened body; rounded base; constricted neck, embellished with plats of toothed-stamp lines; collar with two nodes, bearing similar ornamentation in circular lines.

Plate 14. Restored Pottery Vessel or Cup
Castle Creek Site
Castle Creek Focus, Owasco Aspect
Height 4 1/4 inches

Semiglobular, fabric-roughened body; rounded base; constricted neck; everted rim, decorated with row of circular punctates.

Plate 15.

Restored Pottery Vessel
Castle Creek Site
Castle Creek Focus, Owasco Aspect
Height approximately 7 1/4 inches

Elongated, semiglobular, fabric-malleated body; constricted neck; sharply everted rim; rounded obliquely outsloping lip; broad incised lines encircling neck; short oblique lines of dentate-stamp impressions on neck and rim; eight appliqued conventionalized human head (?) effigies on shoulder.

Drawing and photograph by Foster Disinger, Binghamton, New York. Reproduced by courtesy of Mr. Disinger and the Broome County Historical Society.

Collection of the Broome County Historical Society, Binghamton, New York.

Plate 16. Restored Pottery Vessels
Bainbridge Site
Castle Creek Focus, Owasco Aspect

1, semiglobular body, round base, surfaced with fabric imprint; constricted neck; everted collared rim, bearing three weak castellations; herringbone design on neck, linear design on collar, all dentate-stamp impressed; circular mouth; flat lip; 2, form similar to 1; oval mouth; dentate-stamp-impressed collar and rim; insloping lip; incised chevrons (or rhomboids) on shoulder; smoothed-over, fabric-malleated body.

executed with cord-wrapped stick, punch, or in the overwhelming majority of instances, with a dentate or toothed stamp, often producing an impression resembling a string of beads. Embellishment is usually confined to the neck and rim or collar, and is frequent also on the lip and inner surface of the rim. More meticulous workmanship and greater originality and variety of design prevailingly distinguish Castle Creek vessels (Plates 16-19), and not uncommonly their ornamentation includes rude and irregular incising, mainly of a chevron pattern, on the vessel neck.

So incongruous and disharmonic is the combination of this clumsy and hesitant incising with the sophisticated dentate stamping, which is often so fine and regular that we have styled it pointillé work, that the conclusion seems obvious.[1] The incising is an innovation, tentatively executed; the punctate technique is the product of long tradition and experience, is in fact, the "ear mark" of the Owasco potter, and this fact, considered in combination with the rounded bottom, semiglobular or globular body, and collared rim, often bearing nodes or bosses and castellations,[2] constitutes the stylistic basis upon which the writer has predicated Iroquois connections with the Castle Creek Focus, since these comprise well-established elements of Iroquois ceramics.[3] To be sure, sporadic incised work, an occasional rounded-or flattened-base pot, and less rarely weak rim points, occur on Canandaigua ware (Plates 21, fig. 3; 22, figs. 4, 6, 9; 24, figs. 25, 26; text fig. 3). Moreover, other criteria are present within the Owasco Aspect as a whole to support the thesis that Iroquois influence came not as a sudden flood but gradually. What we may judge to be the earliest components - St. Helena, Waneta Lake, Levanna, Jack's Reef, Norwich, Wilbur Lake, Hilltop, and Enders (see pages 74, 77, 80, 83, 89, 90, 94) - furnish negligible evidence, but later, within the Canandaigua Focus, it becomes much stronger, as for example on the Canandaigua site (pages 76, 77); and from this assumed diffusion from remote Iroquois sources we arrive at the suggestion of a close contact, perhaps in the Susquehanna Valley, in Castle Creek times.

Apart from the ceramic affinities already enumerated, Owasco-Iroquois parallels are to be found in the human face and other effigies upon the pipes, even those of stone (Plate 7, figs. 14, 16-18);[4] in the almost exclusive use of the triangular projectile point (those of the Iroquois being prevailingly smaller and isosceles, but indistinguishable from certain Canandaigua specimens illustrated on Plate 26, figs. 7, 13, 14); the bar, chisel, and thick-poll types of celt (rare in the Owasco, Plate 26, figs. 59-61); faceted pebble hammerstone (Plate 27, fig. 5); multiple-pitted hammerstone (Plate 27, fig. 3); thin sandstone disk with smooth or notched periphery (Castle Creek Focus only, Plate 27, figs. 18, 19); incised bone awl (Plate 28, figs. 32-35); cylindrical antler flaker with expanded top (Plate 28, fig. 42); deer metapodial beaming tool (Plate 28, fig. 47); deer innominate bone scraper (Plate 28, fig. 45); bear mandible

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[1] See plates 12; 16, fig. 2; 17, figs. 3, 6; 18, figs. 5, 6; 19, fig. 5; 20, fig. 5; 21, figs. 1-8.

[2] See plates 10, figs. 1, 5, 6; 13; 16; 19, fig. 5; 20, fig. 5; 21, figs. 5, 6, 8, 9.

[3] Ritchie, 1934, p. 50.

[4] However, such effigies are rare on early Iroquois trumpet pipes and the primary source may lie in the Owasco (see p. 57).

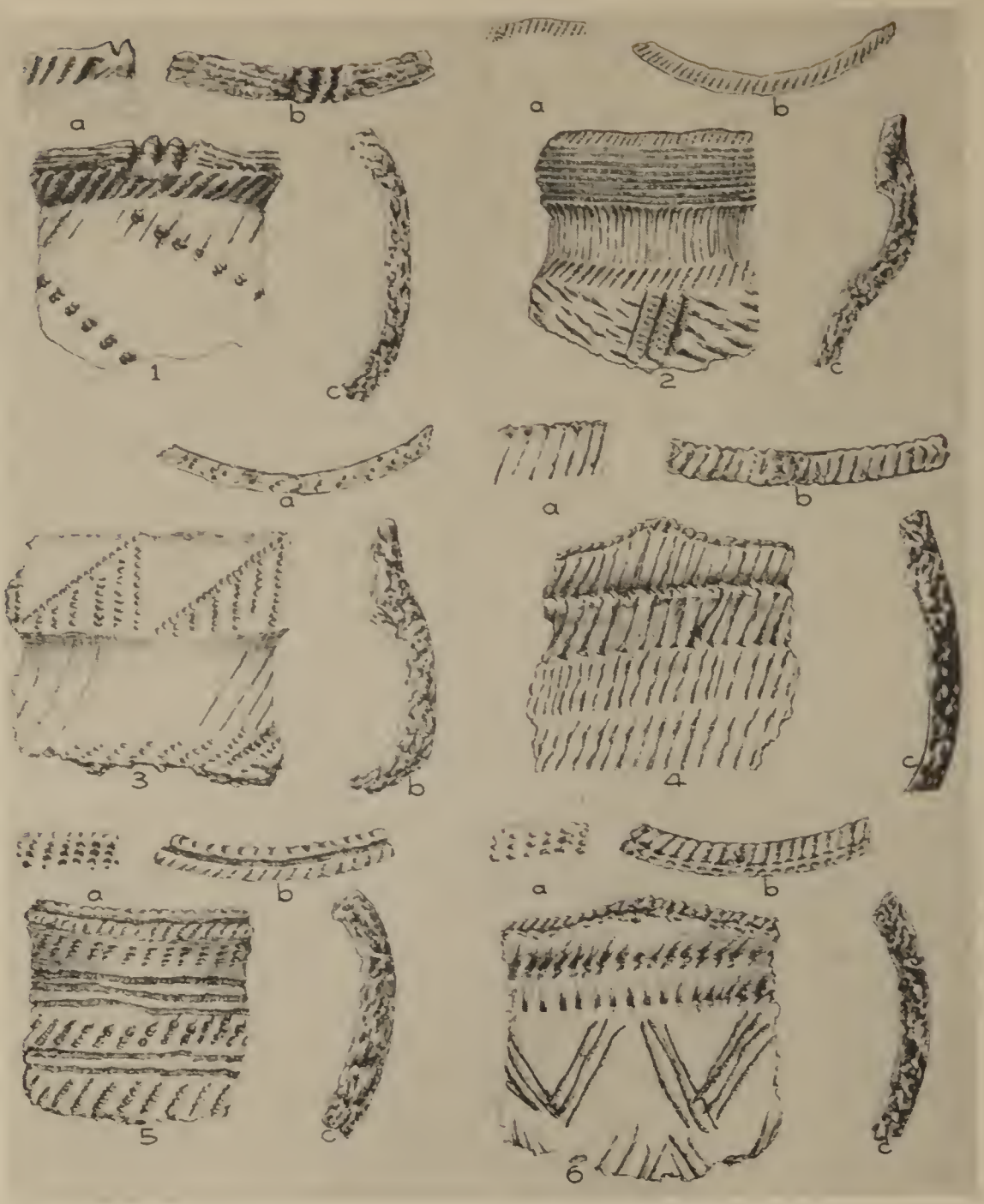

Plate 17. Rim Potsherds
Illustrating Form and Decoration in the Owasco Aspect
All from Castle Creek Site, Castle Creek Focus

1, everted, crenated rim, rough outsloping lip, short linear, and plats of oval dentate-stamp impressions (a, inner rim surface); 2, straight collared rim, flat outsloping lip, fine rectangular dentate-stamped work in linear design on collar and shoulder, narrow incised lines on neck (a, inner rim surface); 3, straight collared rim, flat lip, triangle complex in oval dentate-stamp work on collar, incised lines on neck; 4, mildly everted, beaded and castellated rim, decorated with short linear impressions (a, inner rim surface); 5, mildly everted rim, flat outsloping lip, linear ornamentation in toothed-stamp impressions (a, rim interior); 6, weak castellation on mildly everted rim, flat outsloping lip, triangular punctates above rude incised chevrons (a, rim interior).

Maximum length of fig. 6 is 3 1/2 inches.

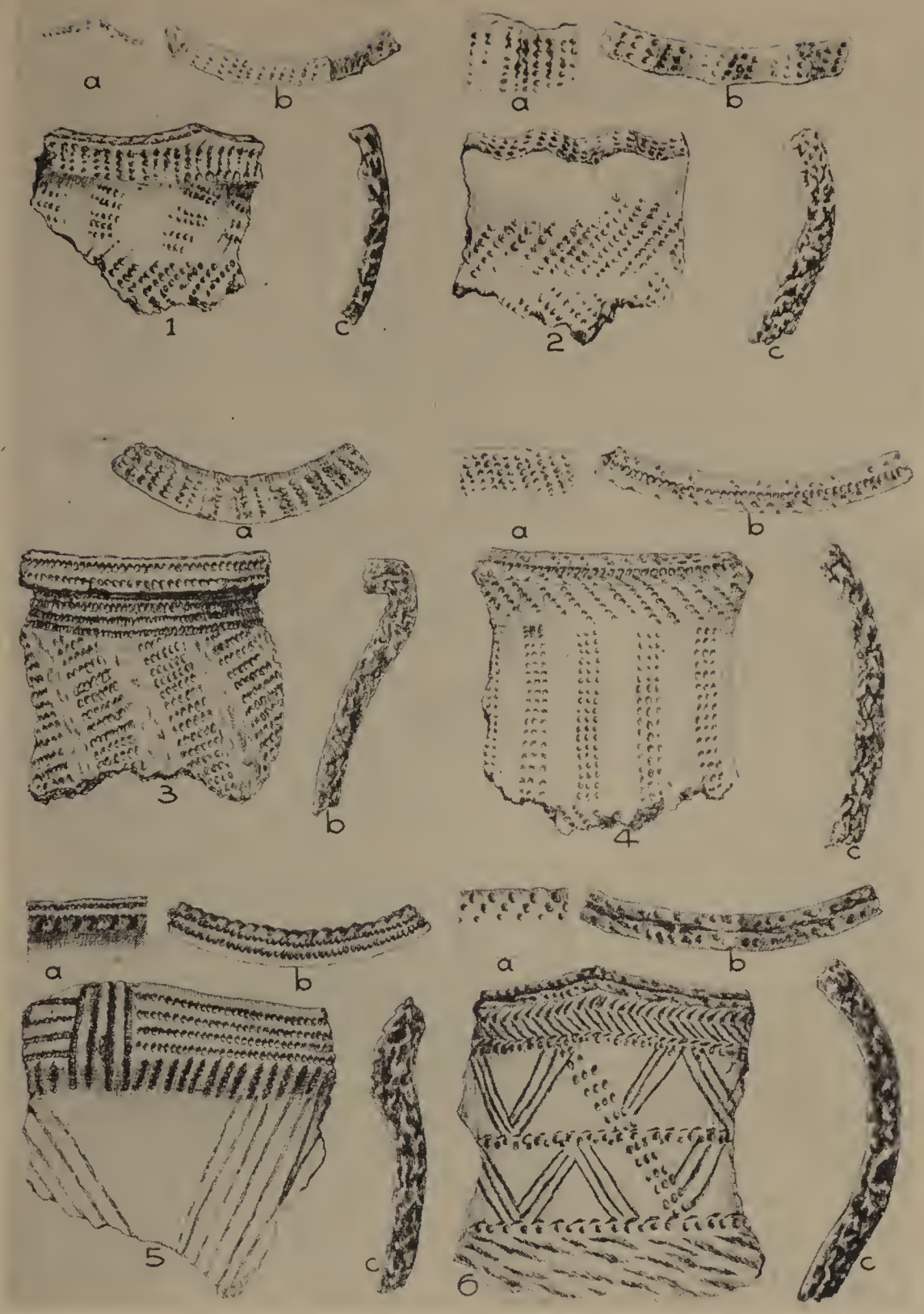

Plate 18. Rim Potsherds
Illustrating Form and Decoration in the Owasco Aspect

All from Castle Creek Focus; 5, 6, from Bainbridge site, others from Castle Creek site.

1, beaded and castellated rim, flat outsloping lip, dentate plat and herringbone designs (a, inner surface of rim); 2, scalloped rim, oblique line decoration in punctate-stamp work (a, inner rim surface); 3, sharply everted rim, horizontal line and plat decoration (a, lip surface); 4, oblique line and plat decoration (a, inner rim surface); 5, collared inverted rim, flat insloping lip, dentated line decoration and incised chevron (a, inner rim surface); 6, castellated everted rim, flat outsloping lip, line and plat decoration in dentate-stamp work, incised chevron and oblique line elements (a, inner rim surface).

Maximum length of fig. 3 is 3 inches.

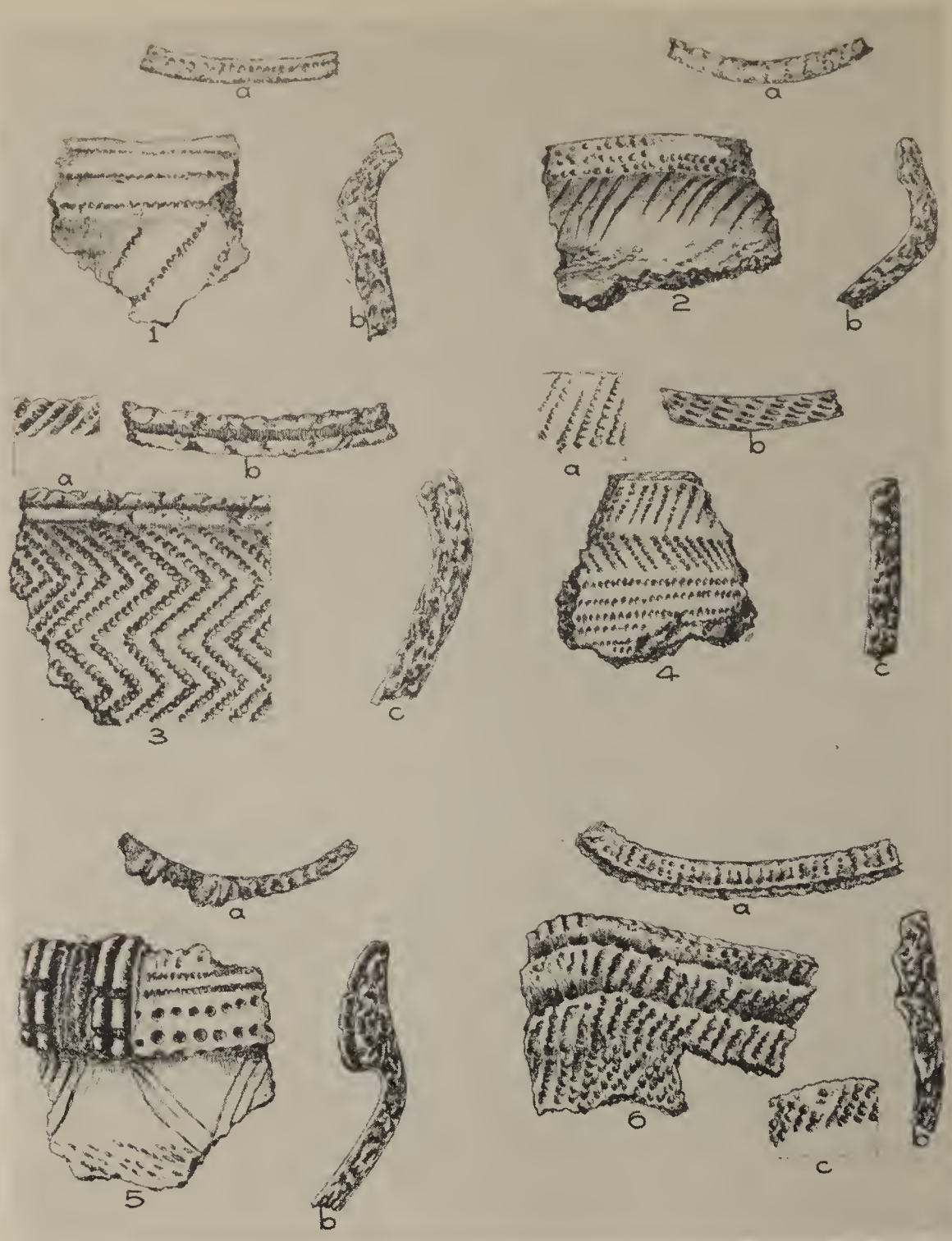

Plate 19. Rim Potsherds
Illustrating Form and Decoration in the Owasco Aspect

1-4, Canandaigua Focus; 5, 6, Castle Creek Focus. 1, 2, Canandaigua site; 3, Levanna site; 4, Wilbur Lake site; 5, 6, Castle Creek site.

1, inverted rim, flat insloping lip, linear dentate-stamp decoration; 2, sharp neck constriction, mildly everted rim, low collar, rounded lip, rude dentate, and broad linear incised decoration; 3, everted rim, flat outsloping lip, herringbone design executed in large oval dentate impressions (a, inner surface of rim); 4, straight rim, flat lip, linear and herringbone dentate ornamentation (a, inner rim surface); 5, collar with two nodes or bosses, flat lip, oval dentate and circular linear punctate decoration on collar, narrow incised chevron on neck; 6, slightly everted rim with appliqued beads or ridges, flat outsloping lip, rude linear dentate ornamentation (c, inner rim surface).

Maximum length of fig. 5 is 3 1/4 inches.

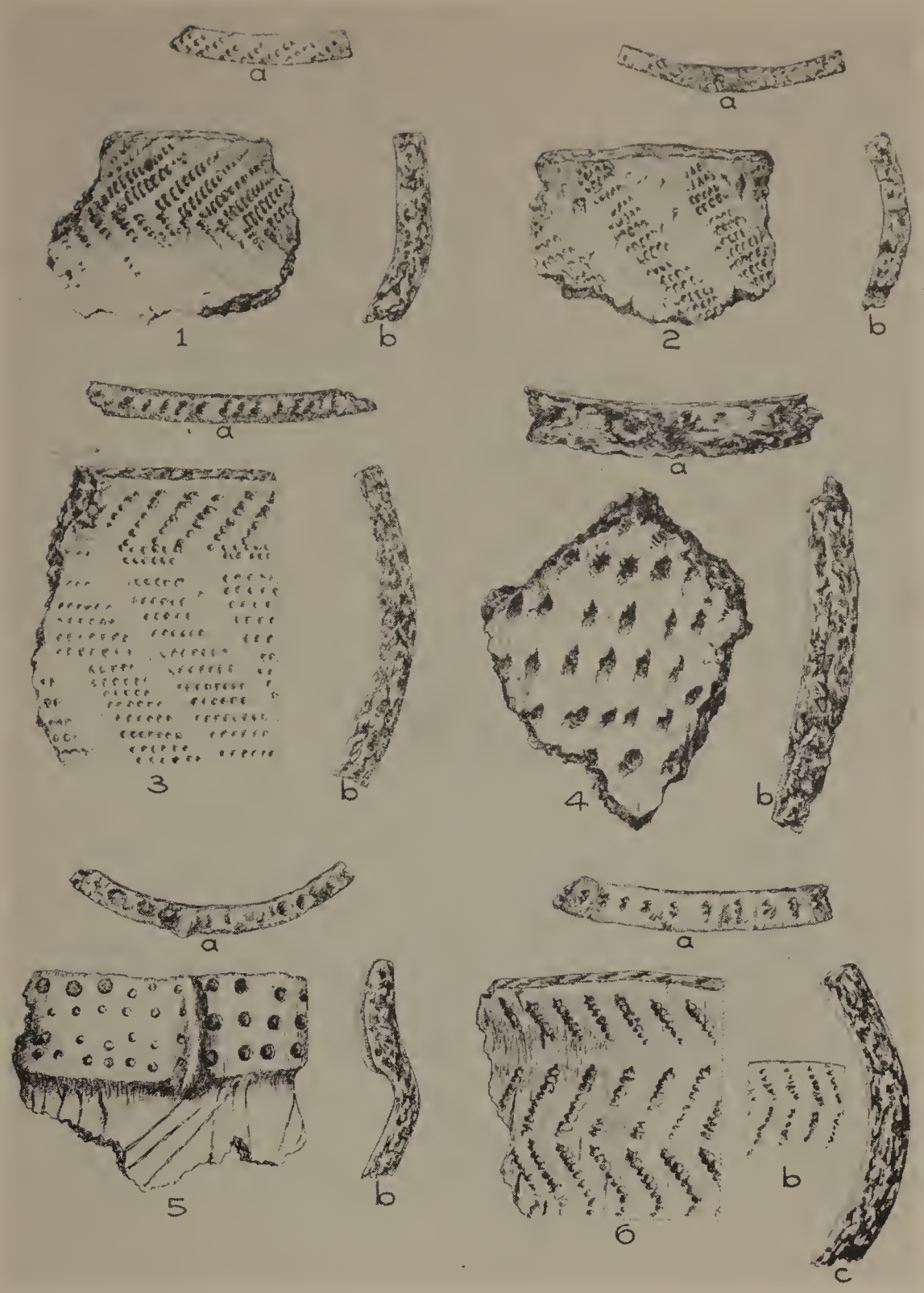

Plate 20. Rim Potsherds (except fig. 4)
Illustrating Form and Decoration in the Owasco Aspect

1-4, 6, Canandaigua Focus; 5, Castle Creek Focus. 1, 2, Canandaigua site; 3, 4, St. Helena site; 5, Castle Creek site; 6, Levanna site.

1, straight rim, flat lip, herringbone design in oval tooth-marks; 2, 3, mildly everted rim, flat outsloping lip, plat design impressed with dentate stamp; 4, neck sherd, triangular punctates; 5, nearly straight collar with narrow boss and annular and circular punctate impressions, incised decoration on neck; 6, everted rim, dentate-stamp-impressed herringbone design (a, inner rim surface).

Maximum length of fig. 3 is 2 5/8 inches.

scraper (Plate 28, fig. 46); barbed fishhook (Plate 31, figs. 4-8);[1] harpoon barbed at both ends (Plate 29, fig. 8); broad, multiple bilaterally barbed harpoon (Plate 33, figs. 9, 10, 13, 15, 16); arrow-point from terminal phalange of deer (Castle Creek site only); large polished bone tube (Plate 29, figs. 17, 18); bone plaque (Plate 29, figs. 25, 26); deer phalangeal cone (Plate 29, figs. 27-31); small, three-toothed, decorated comb (Bainbridge site only, Plate 29, fig. 33); antler pick (Plate 29, fig. 49); antler hoe (Plate 29, fig. 34); utensils made from the box turtle carapace (Plate 29, figs. 35, 47); box turtle shell rattle (Canandaigua site only); pendants from human skull sections; pendants from deer epiphyses (Castle Creek site only); round or oval pebble pendants (Plate 46, fig. 7); and short, wampum-like, marine shell beads (Canandaigua site only, Plate 29, fig. 60; rare also on prehistoric Iroquois sites).

Beside material culture traits the following less diagnostic elements occur in common: hilltop settlements remote from waterways, use of the palisade with exterior ditch, deep U-shaped cache pits, and flexed and bundle burials with little or no grave goods.

To prevent overburdening the text with descriptive matter, the 288[2] culture traits ascertained by excavation for the Owasco Aspect are tabulated with frequencies, under convenient categories, in the trait table which follows on pages 341-351 and for the most part, are illustrated on Plates 7-47, where they are briefly described in the captions. Of the total, 130 or 45.1% are common to both foci, and the following table gives the analysis by categories.

Comparison of Canandaigua and Castle Creek Foci,
Owasco Aspect

Category	Total no. of traits	Traits present in Canandaigua Focus		Traits present in Castle Creek Focus		Traits common to Canandaigua and Castle Creek Foci	
		No.	%	No.	%	No.	%
Chipped Stone	24	22	91.7	14	85.3	12	50.0
Polished Stone	20	16	80.0	13	65.0	10	50.0
Rough Stone	29	21	72.4	19	65.5	11	37.9
Native Copper	1	1	100.0	0	0	0	0
Bone and Antler	103	76	37.8	61	59.2	32	31.1
Shell	4	4	100.0	0	0	0	0
Ceramics	88	63	71.6	81	92.0	56	63.6
Burials	7	3	42.9	7	100.0	3	42.9
Miscellaneous	12	10	83.3	8	66.7	6	50.0
TOTAL	288	216	75.0	203	70.5	130	45.1

[1]Since this is found in the pre-Owasco Kipp Island site (p. 132.), is abundant on the Jack's Reef component (Canandaigua Focus) (p. 83.), and is rare on early Iroquois stations, it was probably acquired by the Iroquois from Owasco contacts.

[2]Thirty-one more, from sites not intensively excavated, are present on the supplementary list, see pages 352-353.

Plate 21.

Rim Potsherds
Castle Creek Site
Castle Creek Focus, Owasco Aspect

1, everted rim ornamented with annular punctate and dentate-stamp impressions; 2, collared sherd bearing punctate and incised decoration; 3, portion of same pot analyzed in Plate 10, fig. 5; 4, series of low rim nodes; 5, collared rim with nodes and castellations, linear annular punctate and incised chevron ornamentation; 6, analyzed in Plate 19, fig. 5; 7, beaded rim, circular punctate, dentate-stamp and incised embellishment; 8, very similar to fig. 4; 9, bifurcated rim node or boss; 10, analyzed in Plate 17, fig. 2.

Maximum length of fig. 5 is 6 1/2 inches.

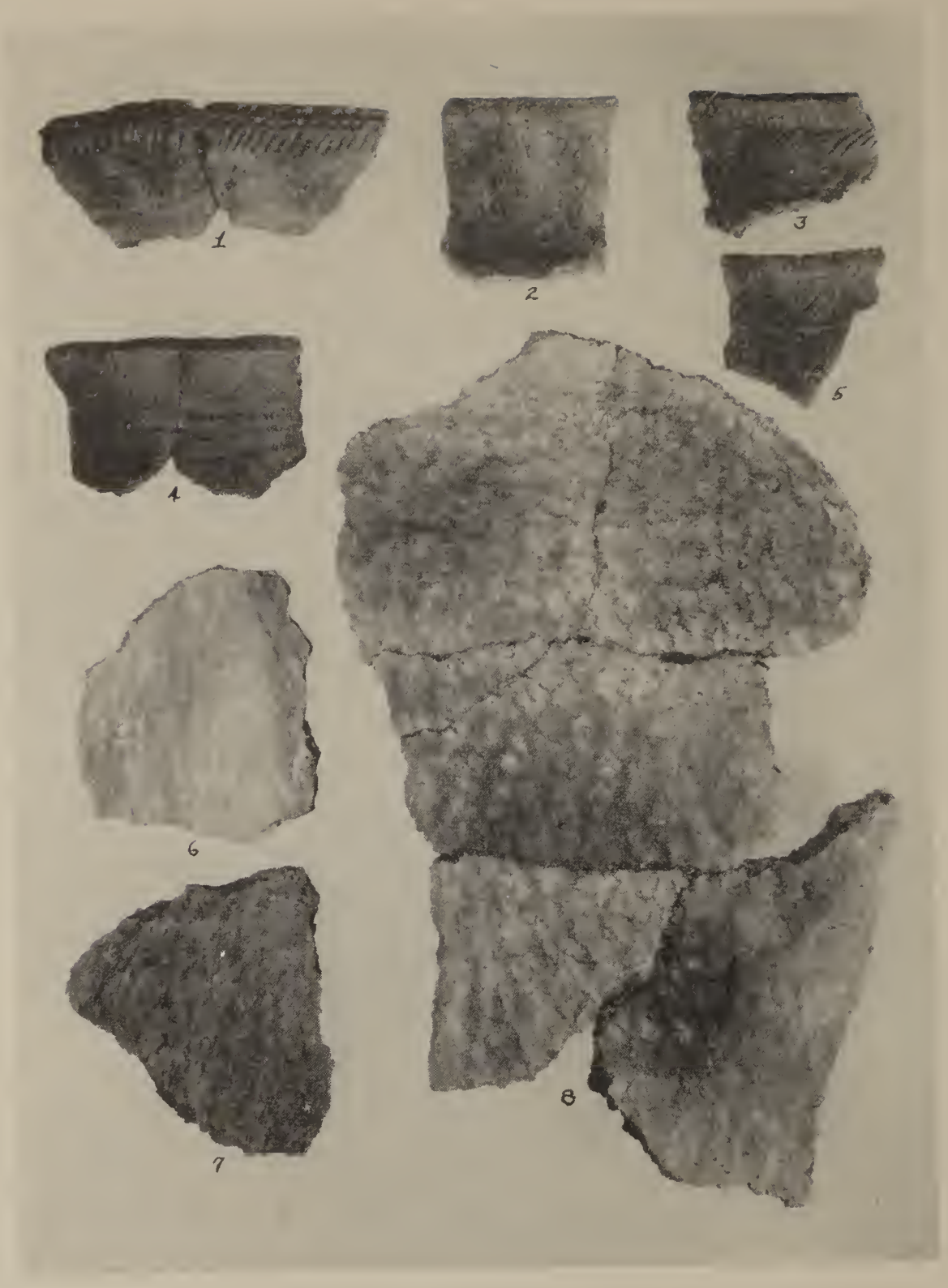

Plate 22.

Rim and Body Potsherds
Canandaigua Site
Canandaigua Focus, Owasco Aspect

All rims everted. 1, circular and linear punctate ornamentation; 2, brush-marked surface; 3, analyzed in Plate 19, fig. 2; 4, linear dentate-stamp work; 5, oblique lines and plats made with toothed stamp; 6, cord (?)-roughened body sherd; 7, 8, fabric-roughened body sherds.

Maximum length of fig. 1 is 4 1/2 inches.

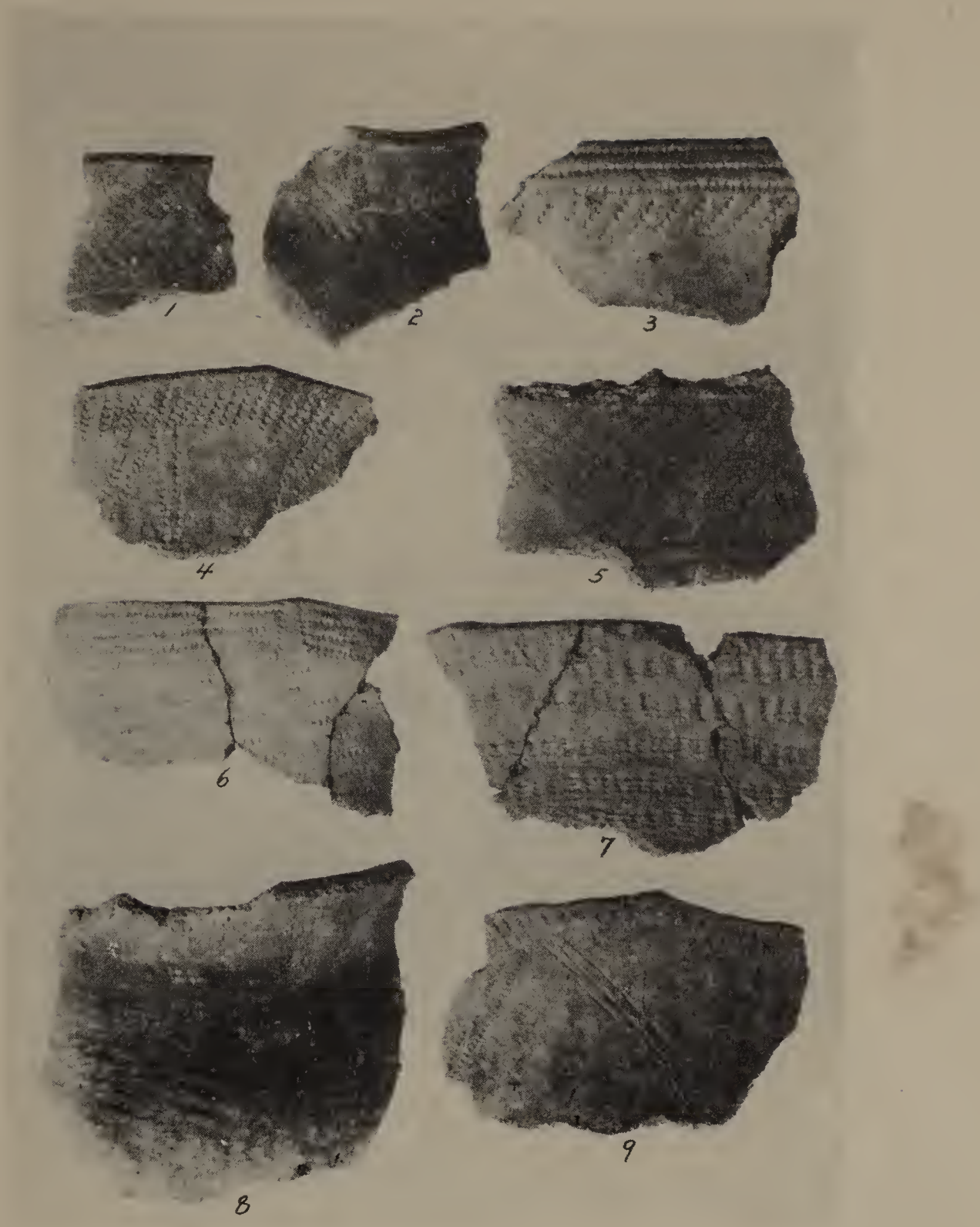

Plate 23. Rim Sherds of Pottery Vessels
Canandaigua Site
Canandaigua Focus, Owasco Aspect

3, 4, are straight, others everted. All embellished with dentate-stamp impressions: 1, in herringbone design; 4, 9, with chevrons; 6, with plats; others simple lines. 4, 6, 9, have weak castellations.

Maximum length of fig. 7 is 6 inches.

A summary of the determinants of the Owasco Aspect in addition to the already described pottery, would include the following: the obtuse angle elbow pipe of clay and stone (Plates 7; 24, figs. 17, 18; 34, figs. 11-16); broad isosceles and equilateral triangular arrow-points with straight or more commonly concave base (Plate 26, figs. 6-24);[1] a triangular, point-shaped flint object, chipped on both sides, with thick blunted base, considered by the writer to be a strike-a-light[2] (Plates 24, fig. 6; 26, figs. 52-55; 37, fig. 18; 38, figs. 11, 16); a type of mortar with a broad deep pit on one or both faces, believed to have been employed in crushing burned stone for pottery grit (Plate 27, fig. 11); harpoons with broad, flat or curved tang and multiple bilateral barbs (Plate 33, figs. 9-13, 15, 16); long, narrow, bone points, rectangular, oval or round in section, with flat or tapered blunt base (Plate 29, figs. 12-14); large polished tubes of mammal long bone (Plate 29, figs. 17, 18); a unique type of antler sleeve or socket, probably employed like similar specimens from the Swiss Neolithic[3] in helving celts (Plate 29, figs. 23, 24); and perforated and often ground deer phalangeal bones, thought to have been decorative fringe cones or bangles and/or for use in the cup and pin game (Plate 29, figs. 27-31).

Rarely present are flint knives (Plate 26, figs. 26-28); rectangular stone pendants (possibly gorgets in certain cases, for most examples are fragmentary) (Plates 26, figs. 65-68; 38, figs. 31, 32); stone hoes (Plate 27, fig. 12); the so-called bolas-stone (Plate 27, fig. 16); the stone phallic effigy; and rolled native copper beads (Plate 29, fig. 58). Oval and round flint end scrapers, often serrated, (Plates 37, figs. 15-18; 38, figs. 6, 7, 12-14) are very abundant on certain eastern New York stations (Hilltop, Norwich, Wilbur Lake, Enders, Turnbull), where they are usually associated with numerous drills, mainly based on a rough spall or with rectanguloid expanded base (Plates 26, figs. 39-51; 37, figs. 13, 14, 25; 38, figs. 8-10, 17), and sinewstones with multiple deep grooves (Plates 27, figs. 20, 21; 37, fig. 23; 38, figs. 34, 35). They are rare or wanting on others. However, the Canandaigua site furnished a plentitude of drills, but no end scrapers or sinewstones.

Burial practices were simple, the large majority of skeletons found being single inhumations in the loosely or tightly flexed position. However, multiple flexed, multiple bundle, semisitting, sitting, extended (young infants only), and a single skull burial containing finger bones are on record (see Plate 31, figs. 42-44). On only one site (Canandaigua) was a regular cemetery found,[4] it being apparently the custom to inter the dead in abandoned cache pits (Plate 42; text fig. 2). Grave offerings are very rare, usually consisting, when they do occur, of a pipe or pot (Plate 42).

Large deep cache pits, in which are sometimes preserved by carbonization portions of the coarse grass lining, quantities of corn and a few beans, are present in large numbers on most components of the Castle Creek Focus, but are absent or scarce on Canandaigua sites.

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[1]Other examples illustrated in plates of Owasco series.

[2]A quite similar specimen, fused into a lump of iron pyrites, came from a burial on the Kipp Island site (Pt. Peninsula Focus).

[3]Childe, 1925, p. 246 (Fig. 122).

[4]Actually, two separate burial plots were found on this site (Ritchie, 1936, p. 55).

Plate 24. Artifacts of Stone, Bone and Clay
Golah (Klink) Site
Canandaigua Focus, Owasco Aspect

1-3, isosceles triangular points with concave base; 4, isosceles triangular point, straight base; 5, equilateral triangular point, straight base; 6, strike-a-light(?); 7, 8, trianguloid end scrapers; 9, 10, tubular beads; 11, polished splinter awl; 12, 13, deer phalangeal cones; 15, deer ulna awl; 14, 16, rough splinter awls; 17, 18, plain pottery pipes, of obtuse angle elbow form; 19, rim sherd, fabric-malleated, decorated with plats of short impressed lines, everted rim, flat lip; 20, rim sherd similar to 19; 21, rim sherd, oval dentate impressions in plat design, everted rim, flat lip; 22, dentate-stamped herringbone design, everted rim; 23, fabric-roughened surface, everted rim, flat, outsloping lip; 24, rim sherd, herringbone design in well-executed dentate-stamp work, everted rim, flat outsloping lip; 25, 26, rim and neck sherds, respectively, incised herringbone design, everted rim, flat lip.

Articles, except figs. 16, 18, in collection of Albert J. Hoffman, Rochester, New York.

Enders being an exception. Most such pits subsequently served as refuse repositories (text figs. 1, 2). Shallower and broader pits, possibly for roasting (text fig. 5); and round, rather deep pits, solidly filled with mussel shells, perhaps clam bake ovens (Plate 47), occur on many sites, the former more commonly on Canandaigua stations, the latter on Castle Creek components, probably because of their more frequent proximity to streams. Small hearths are a common feature of all sites and large hearths or fire beds are known from some. At Levanna occurred a large oval mass of fire-broken stones (16 feet x 7 feet x 10 inches), with a deep circular pit near one end, thought to have been a barbeque platform.

Circular hut sites, about 10 feet in diameter, with central fireplaces were traced by post-mold patterns on the Canandaigua village (Plate 25, fig. 3), where also was uncovered a rather confused system of deep V-shaped ditches or moats, approximately 10 feet in width and 3 in depth, filled with debris, and thought to have been associated with successively constructed palisade lines supported by earthen ramparts surrounding an expanding village (Plate 25, fig. 2). A similar but shallower ditch, bordered on the inside by the post-molds of a stockade, came to light in the final work done on the Castle Creek settlement, and will later be described.

The use of a small breed of terrier-like dog is proved by burials at Castle Creek (Plate 45) and by broken skulls in the refuse, suggesting their consumption as food, as well as by canine necklace elements found at Canandaigua (Plate 29, figs. 55, 56).

Clearly the Owasco culture was the product of a rather numerous agricultural people, having a well-developed ceramic complex in which Woodland pipes and pottery attained their apogee. From a relatively rude basis this development is broadly traceable beginning in the early Canandaigua Focus and proceeding gradually to the mature Castle Creek expression, accompanied by an apparently progressive increase in the strength of Iroquois influence. (Compare plates 8-15).

In seeking for origins in the Owasco complex it is well to remember that certain possible prototypes, notably the obtuse angle elbow form of pipe, are to be found in the demonstrably earlier Pt. Peninsula Focus (Plate 64, figs. 12-15).[1] Other elements possibly derived therefrom include the bolas-stone (Plate 60, fig. 33), broad trianguiar point (Plate 64, figs. 1-3), multiple bilaterally barbed harpoon (Plate 65, fig. 11), barbed fishhook (Plate 62, figs. 11, 12), and single-holed pendant (Plate 86, figs. 26-29). While our knowledge of Pt. Peninsula ceramics is not great, it seems probable that from this source also could have come the pointed-based, toothed stamp-marked pot, for a strong generic resemblance in form, paste, and decoration may be observed between sherds from Kipp Island and sundry Canandaigua sites (Plates 58; 74 and 22-24; 34).

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[1]Note that these earlier forms are only slightly bent. A tubular pottery pipe also occurs in this focus. Thus from the Vine Valley to the Iroquois Aspect we see the evolution of the pipe form from a straight tube through various degrees of bending to a bowl and stem almost at right angles.

Plate 25.

Features of the Canandaigua Site
Canandaigua Focus, Owasco Aspect

1, view, looking west, of portion of the unexcavated site; 2, section through the main moat, filled with refuse, showing V-shape of the original excavation dug in light-colored clay subsoil; breadth 5 feet 2 inches, depth 2 feet 10 inches; 3, circular hut floor, 9 feet in diameter, with hearth near center; stakes mark post-molds; entrance way (?) in foreground.

Plate 26. Chipped and Polished Stone Artifacts of the Owasco Aspect

From the Canandaigua, Levanna, St. Helena, Wilbur Lake and Hilltop Workshop sites (Canandaigua Focus), and Castle Creek and Bainbridge sites (Castle Creek Focus).

1, narrow, stemmed projectile point (Canandaigua site); 2, broad, stemmed knife or projectile point (Levanna site); 3, narrow, side-notched point (Canandaigua site); 4, broad, side-notched point (Canandaigua site); 5, broad, corner-notched point (Castle Creek site); 6-8, isosceles triangular points, with straight base (Canandaigua site); 9-13, isosceles triangular points, with concave base (9, 11, Wilbur Lake site; others Canandaigua site); 14, 15, isosceles triangular points, with V-shaped concave base (14, Canandaigua site; 15, Hilltop Workshop site); 16, isosceles triangular point, with eared base (Canandaigua site); 17, 18, equilateral triangular points, with straight base (17, St. Helena site; 18, Levanna site); 19-21, 23, equilateral triangular points, with concave base (19, 20, Castle Creek site; 21, Bainbridge site; 23, Hilltop Workshop site); 22, 24, equilateral triangular points, with V-shaped concave base (Castle Creek site); 25, thin, retouched, prismatic flake knife (St. Helena site); 26, trianguloid knife (Wilbur Lake site); 27, broad, stemmed knife, similar to fig. 2 (Wilbur Lake site); 28, lanceolate knife, with rounded base (Wilbur Lake site); 29, thick ovate end scraper (Hilltop Workshop site); 30, rounded end scraper (Hilltop Workshop site); 31-34, oval end scrapers (Hilltop Workshop site); 35, trianguloid end scraper (Hilltop Workshop site); 36, side scraper, from irregular flake (Canandaigua site); 37, combined side scraper and graver, from retouched flake (St. Helena site); 38, saw, from flake (Canandaigua site); 39-42, drills, based on rough spall (39-41, Canandaigua site; 42, Hilltop Workshop site); 43, isosceles triangular drill, with concave base (Canandaigua site); 44, straight drill (Canandaigua site); 45, drill, with Y-shaped base (Canandaigua site); 46, drill, with expanded rectanguloid base (Hilltop Workshop site); 47, drill, with expanded trianguloid base (Hilltop Workshop site); 48, 49, drills, T-shaped base (48, Hilltop Workshop site; 49, St. Helena site); 50, drill, expanded side-notched base (Castle Creek site); 51, drill, expanded center, pointed at either end (Hilltop Workshop site); 52-55, strike-a-lights (?), of chert, chipped on both sides, bases battered or smoothed, thought to have been employed with iron pyrites in making fire (52, Canandaigua site; 53, Hilltop Workshop site; 54, St. Helena site; 55, Wilbur Lake site); 56, flint flake fused into lump of decomposed iron pyrites, believed to be a fire-making outfit (Canandaigua site); 57, line-decorated rectanguloid celt (Canandaigua site); 58, trianguloid celt (Canandaigua site); 59, portion of bar type celt (Canandaigua site); 60, chisel type celt (Bainbridge site); 61, portion of thick type celt (Castle Creek site); 62, 63, rectanguloid plano-convex adzes (62, Canandaigua site; 63, Levanna site); 64, trianguloid plano-convex adze (Castle Creek site); 65, plano-convex, adze-like scraper (Castle Creek site); 66-68, fragmentary rectanguloid pendants or gorgets, 66 (from Canandaigua site) incised; 67 (same site) in process, roughly incised; 68 (from Castle Creek) has deep socket-like pit, probably of secondary origin, around perforation; 69, 70, grooved, elongate, pebble pendants (Canandaigua site); 71, conical section of dark steatite pipe bowl, smoothed probably for use as pendant (Canandaigua site, burial 45).

Material: All chipped stone objects of gray Onondaga chert; 57-59, 70, limestone; 60, 65-67, 69, slate; 61, 63, gabbro; 62, gneiss; 64, trachyte (?) porphyry; 68, basalt; 71, steatite.

Plate 26. Chipped and Polished Stone Artifacts of the Owasco Aspect

Actually the point, pipe and pot forms are all old widespread Woodland elements, occurring also in the "Early" Focus of the Coastal Aspect, which is believed to have overlapped with the Canandaigua Focus, and until more evidence is forthcoming, the route of their passage into the Owasco complex must be highly speculative.

Considerable study has been given to the alternative possibility of the Owasco-Iroquois relationship discussed above, namely, the emergence of certain features of the latter culture, if not, indeed, the major paradigm, from the former complex, and while in our ignorance of Iroquois origins, neither possibility can categorically be denied, and the liklihood of reflexes from Owasco contacts is large, still the fundamental dichotomy of form, technique, and motif of decoration in the ceramics (both pipes and pots); the fact that presumably early Owasco sites have very few Iroquois parallels; and the greater density of Owasco population in the central and eastern portions of the state, which were the last to be reached by Iroquois infiltration, militate against this hypothesis. Furthermore, the main outlines of Iroquois culture were evidently already drawn when this people came into what is now New York, and the rather considerable number of shared traits, listed above, have their highest incidence in Castle Creek stations.

Yet on the other hand Woodland elements in the Iroquois complex, especially in the early or generalized phase, cannot be denied,[1] and a broad relationship of some kind involving the Iroquois, Owasco, and Monongahela[2] aspects, and the Younge Focus, placed by Greenman in the Owasco Aspect,[3] is strongly indicated on a ceramic basis.[4]

The most obvious present explanation for this generic similarity is the assumption of mutual participation in a broad basic Woodland platform, traceable in pottery, according to Holmes, from the Yadkin River in North Carolina to the Maritime Provinces of Canada.[5] North of the Ohio River, at least, this province extends far to the west, to embrace the entire area of the Great Lakes, as a wealth of recent evidence demonstrates,[6] but speculation regarding the precise origin, from the constituents thereof, of that manifestation known as the Owasco Aspect, seems premature.

It is also futile at this time to attempt ethnic identification of this culture, although its proximity to the historic period hints at the possibility. If we are correct in our chronological surmises (see Plate 4) and in regarding the Castle Creek Focus as the most recent stage of Owasco development, Lenape or Delaware connections are suspect on grounds of territorial overlapping. Unfortunately, the archaeological background of this numerous people

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[1]Ritchie, 1938b, footnote p. 95.

[2]Butler, 1939.

[3]Greenman, 1937, pp. 95-96. The writer is not fully in accord with this identification.

[4]The resemblances between the pipes are much stronger than between the pots when the Monongahela and Owasco are compared (see Butler, Plates 17, 19 and Plate 7, this work).

[5]Holmes, 1903, p. 146 ff.

[6]Information supplied by Dr. James B. Griffin, Ceramic Repository for the Eastern United States, University of Michigan, and notes taken at the Woodland Conference, University of Chicago, May 12-13, 1941.

has still to be elucidated. Regarding this problem, Speck remarks - "the point of archaeology will not be made until we obtain certain criteria for connecting the aboriginal remains, so abundant in the ground about us, with the actual culture of the Delawares and their kindred. Herein lies a dissertation for the systematic student. How this can be done still remains a perplexity since archaeological remains illustrate only the arts and crafts, the material culture of a people, while the historic tribes can be best researched through their languages, their social and religious customs, and not through their prehistoric crafts which underwent an immediate change, even extinction, with the introduction of European materials. The two fields of study do not well coincide except insofar as the findings in archaeology may refer to ceremonial and religious practices. Through a study of the latter among the survivors of these tribes a connection may perhaps be traceable. There are indeed, certain distinctive properties in the religion of the Delawares and there are distinctive properties of New Jersey and Pennsylvania archaeology whose coincidences should be significant. I have in mind, as bearing on this point, the prominence in both departments of research (that is, local ethnology and archaeology) of representations of the human face and figure. The stone faces and masks occurring with striking frequency among archaeological finds here, and the prominence of masks and the human image in Delaware worship from earliest times to the present. This alone invokes a basis for the identification of the Delawares' past in archaeology with the Delawares' present in ethnology."[1]

Now, while no stone human effigy faces have to the writer's knowledge actually been found on a Castle Creek component, their sole recorded occurrence in New York falls within the terrain of this culture, and of much more significance, mask-like faces are rather frequent on Castle Creek pipe bowls (Plate 7, figs. 14, 16, 17; cf. Wren, 1914, Plate 15, figs. 17, 26)[2] and conventionalized human effigies occur on a unique pot from the Castle Creek station (Plate 15). Search should continue, especially in northeastern Pennsylvania, northern New Jersey, and southeastern New York, for sites which may reveal the transition of this culture into the early historic era.

Components of the Owasco Aspect
Castle Creek Focus

More or less detailed reports covering the excavation of most of the major components of the Owasco culture have already been published and are readily available to the student. For several important stations, however, dug by amateur archaeologists or collectors,

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[1]Speck, 1935, p. 7.

[2]Several excellent examples, found locally, are in the collection of the Tioga Point Museum, at Athens, Pennsylvania, and the writer has records of others, some of stone, definitely attributable to this occupation.

Plate 27. Rough Stone Artifacts of the Owasco Aspect

From the Canandaigua, Levanna, St. Helena and Wilbur Lake sites (Canandaigua Focus) and the Castle Creek and Bainbridge sites (Castle Creek Focus).

1, unpitted pebble hammerstone (Canandaigua site); 2, bipitted pebble hammerstone (Castle Creek site); 3, rectanguloid, multiple (6)-pitted hammerstone (Canandaigua site); 4, 5, faceted pebble hammerstones (4, Castle Creek site; 5, St. Helena site); 6, diskiform hammerstone, with medially ridged or keeled edge (Canandaigua site); 7, scarified pebble anvilstone (Bainbridge site); 8, flat, single-pitted pebble (pit outlined, see arrow) (Wilbur Lake site); 9, tabular whetstone (Levanna site); 10, whetstone with incised line on face, possibly for sharpening awl points (Wilbur Lake site); 11, mortar with single deep pit, probably for pulverizing burned rock for pottery temper (Castle Creek site); 12, hoe, edge much smoothed (Bainbridge site); 13, flat netsinker, nocks ground in (Bainbridge site); 14, ground hematite paintstone (Canandaigua site, burial 17); 15, cylindrical pestle (Levanna site); 16, bolas-stone (Levanna site); 17, 22, engraved flat limestone pebbles, of unknown significance, 17 may represent turtle (Canandaigua site); 18, thin, chipped, sandstone disk, of unknown use (Bainbridge site); 19, thin, chipped, sandstone disk, notched on two opposite sides, possibly a line-or netsinker (Bainbridge site); 20, sinewstone, with multiple deep grooves (Castle Creek site); 21, sinewstone, with a single deep, and several shallow grooves (Bainbridge site).

Material: 1, 16, quartzite; 2, 7, 8, 10-12, 15, 18-21, sandstone; 3, 4, gabbro; 5, trachyte; 6, 17, 22, limestone; 9, 13, slate; 14, fossiliferous hematite.

scanty or no records are available. Other workers, affiliated with various archaeological societies, have performed very creditably and anticipate publication of their researches in due course of time. Because of these facts, the writer, in visiting certain sites and studying the collections made therefrom by others, has sometimes been handicapped by lack of data or restricted in the full utilization of material. Hence the brevity or omission of description for certain of the sites which follows.

Components at Athens, Pennsylvania (Plate 6, sites 21)

Tioga Point, formed by the confluence of the Chemung with the Susquehanna River, just south of the New York state line, was occupied by many cultures early and late, which passed through the great Susquehanna corridor. A number of burials and pits producing Owasco objects, mainly referable to the Castle Creek Focus, have been opened here at Athens and in its vicinity. Through the courtesy of Dr. Elsie Murray, Director of the Tioga Point Museum, the writer has been able to examine this evidence, some of which he witnessed being unearthed in 1931.

Willow Point Components (Plate 6, sites 22)

Palmer Site

Some six miles west of Binghamton, where the Chenango River enters the Susquehanna, a bend of the latter creates on its south bank a large promontory known as Willow Point. Surface traces of several occupations exist here, as at numerous advantageous places along the entire course of this great north-south prehistoric highway, and formerly three important components were to be found here, two of them pertaining to the Castle Creek Focus, the third to the Iroquois, probably of the Andaste tribe.

Very unfortunately, only a small sampling exists of the largest of the three, an immense village, comparable in situation and culture to the Castle Creek settlement, presently to be described. It occupied a long, high, nearly flat-topped knoll, sloping to the river, which in 1928 was entirely removed for its gravel content. The writer, arriving before the destruction was quite complete, managed to secure a small quantity of potsherds. Other specimens and a fragmentary pipe were presented by the gravel owner, Mr. Fred A. Rider of Vestal.

Shovel operators reported the knoll literally covered with deep refuse-filled pits, some of which could still be seen in profile, and stated that at least 30 human skeletons had been dug away. The entire slope to the river bore a thick shell midden in which little besides

Plate 28. Bone and Antler Artifacts of the Owasco Aspect

From the Canandaigua and Levanna sites (Canandaigua Focus) and Castle Creek and Bainbridge sites (Castle Creek Focus).

1, rough splinter awl (Canandaigua site); 2-5, ground or polished splinter awls, from bird and mammal long bone (Canandaigua site); 6, deer ulna awl (Canandaigua site); 7, deer metapodial awl, condyle intact (Canandaigua site); 8, split deer metapodial awl (Castle Creek site); 9, deer scapula awl (Canandaigua site); 10-12, awls, from various portions of deer mandible (Canandaigua site); 13, awl, from deer rib (Canandaigua site); 14, awl, from deer styliform bone (Canandaigua site); 15, awl, from bear tibia (Castle Creek site); 16, awl, from raccoon fibula (Canandaigua site); 17, lynx ulna awl (Canandaigua site); 18, fox ulna awl (Canandaigua site); 19, awl, from fox mandible (Canandaigua site); 20, awl, from split heron radius (Canandaigua site); 21, turkey ulna awl (Canandaigua site); 22, turkey tibia awl (distal extremity) (Levanna site); 23, turkey tibia awl (proximal extremity) (Canandaigua site); 24, awl, from turkey tarsometatarsus (Canandaigua site); 25, awl, from turkey humerus (Canandaigua site); 26, awl, from turkey femur (Canandaigua site); 27, awl, from deer antler tine (Castle Creek site); 28-31, awls, from long bones of unidentified species of mammals and birds (Canandaigua site); 32-35, engraved decoration on polished splinter awls, arrow in fig. 32 points to traced-over design suggesting conventionalized Iroquois "tree of life," over vertical parallel lines, over chevon (all Canandaigua site); 36, thin, curved, mat needle (Castle Creek site); 37, thin, curved mat needle (Canandaigua site); 38, deer antler tine flaker (Canandaigua site); 39, cylindrical antler flaker (Castle Creek site); 40, 41, cylindrical antler flakers (Canandaigua site); 42, cylindrical antler flaker, expanded top (Canandaigua site); 43, flaker, from long bone section, edges chipped (Canandaigua site); 44, spatulate object of long bone (Bainbridge site); 45, scraper, from deer innominate bone, arrow points to sharpened edge (Canandaigua site); 46, scraper, from bear mandible, arrow points to sharpened edge (Canandaigua site); 47, portion of beaming tool or draw-shave skin scraper, from deer metapodial bone (Canandaigua site); 48, fragmentary beaming tool, from bear tibia (Castle Creek site).

mussel valves could be found by the writer, who excavated in the remaining portion in 1931. At this time a closely flexed burial in a deep pit, and a plow-torn skeleton, accompanied by an elbow pipe, were uncovered on an adjacent rise.

Beyond doubt the Palmer site would have contributed much to knowledge of the Castle Creek Focus.

Clark Site

Approximately half a mile east of the Palmer site, and also on Willow Point, on a low rise in the sandy field adjacent to the residence of the late Mr. Roger P. Clark, which lies almost opposite the east end of Gray Island, pits and graves of both Iroquois and Owasco people were discovered and excavated in 1930 by the Rochester Museum, through the courtesy of Mr. Clark and the interest of Mr. Thomas Hutton, Editor of the Binghamton Press, who notified the museum of the chance finding of an historic Iroquois grave nearby.

Here were worked out a total of 43 burials, flexed, bundle (one example), and in a sitting position (2 examples), many of which were interred in cache pits; also 32 deep pits, some containing refuse and artifacts. Contemporaneous occupation by the two peoples was at first suspected, but close analysis of pit contents seems to refute this. Ten pits produced only Iroquois ware, 6 solely Owasco pottery, 8 held non-diagnostic articles, and 8 were entirely sterile.

The prevailing absence of grave goods rendered cultural identification of the burials impossible, but in 2 instances Owasco sherds in the grave fill suggested the older burials, while the 10 graves producing Iroquois pot fragments were with confidence attributed to this occupation. Only 2 burials had mortuary goods, one Iroquois, the other an adult male with a well decorated obtuse angle elbow pipe, pictured in Plate 7, fig. 21, and a broad triangular arrowpoint, both good Castle Creek types. In an adjoining grave, connected by a trench 2 feet wide, reposed the closely flexed skeleton of an adult male, probably of the same period, exhibiting a multiplicity of perforating lesions, attributed to multiple myeloma or bone marrow tumor, the first recorded instance of this disease entity in prehistoric times.[1]

Castle Creek Component (Plate 6, site 23)[2]

Following the excavations at Willow Point just referred to, came the Rochester Museum's work in 1931 and for a short period in 1933,[3] on the extremely important Castle

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[1]Ritchie and Warren, 1932.

[2]Ritchie, 1934.

[3]Funds for the investigations in 1933 were supplied by Lewis Henry Morgan Chapter, New York State Archeological Association.

Plate 29. Bone and Antler Artifacts of the Owasco Aspect

From the Canandaigua and Levanna sites (Canandaigua Focus) and Castle Creek and Bainbridge sites (Castle Creek Focus).

1, antler wedge or chisel (Canandaigua site); 2, fishhook in process by cutting from curved bone blank (Canandaigua site); 3, fishhook in process by drilling and cutting curved bone section (Castle Creek site); 4, fishhook from flat bone, with knobbed shank (Canandaigua site); 5, harpoon with multiple unilateral barbs, fishhook has been cut from base (Castle Creek site); 6, harpoon or arrowpoint with single bilateral barb (Canandaigua site); 7, fragmentary harpoon with multiple bilateral barbs (Canandaigua site); 8, harpoon with multiple bilateral barbs at either end (Canandaigua site); 9, basal portion of harpoon, probably similar to 7, note group of transverse incisions near either end (Canandaigua site); 10, conical antler arrowpoint (Canandaigua site); 11, lanceolate bone arrowpoint (Levanna site); 12, 13, bone points (Castle Creek site); 14, bone point (Canandaigua site); 15, bone whistle, with three round perforations (Canandaigua site); 16, bone tube of small diameter (Levanna site); 17, long polished bone tube (Bainbridge site); 18, long polished bone tube (Canandaigua site); 19-21, tubular bird bone beads (Canandaigua site); 22, incised bead of mammal bone (Castle Creek site); 23, antler celt-socket (?) in process (Castle Creek site); 24, antler celt-socket (?) (Canandaigua site); 25, bone plaque (Bainbridge site); 26, bone plaque (Canandaigua site); 27, 28, deer phalangeal cones, apex perforated by notching (Castle Creek site); 29, deer phalangeal cone, apex drilled, articular facets nicked (Castle Creek site); 30, deer phalangeal cone, exterior ground smooth (Castle Creek site); 31, deer phalangeal cone, exterior ground smooth and decorated with incised lines (Canandaigua site); 32, rude bone comb (Canandaigua site); 33, antler comb in process (Bainbridge site); 34, elk antler hoe, right side defective (Castle Creek site); 35, fragmentary dish from box turtle carapace (Castle Creek site); 36, beaver incisor, split, long edges ground (Castle Creek site); 37, beaver incisor, whole, distal portion ground, edge gouge-shaped (Canandaigua site); 38, beaver incisor, whole, distal portion ground, edge chisel-shaped (Levanna site); 39, beaver incisor, lingual surface ground away, edge gouge-shaped (Canandaigua site); 40, pin, long bone section, scored flat top (Castle Creek site); 41, pin, long bone section, obliquely truncated top (Castle Creek site); 42, 43, pins, long bone section, oblique, decorated, cone-shaped head (Castle Creek site); 44, segment of deer antler tine, base excavated, use unknown (Castle Creek site); 45, spoon, made from deer skull (Canandaigua site); 46, spoon, made from turkey sternum (Canandaigua site); 47, scoop, evidently reworked from box turtle carapace dish (Castle Creek site); 48, perforated point made from bear tibia (Canandaigua site); 49, deer antler pick, tine sharpened to chisel-edge (Castle Creek site); 50, human femoral head, polished and perforated (Canandaigua site); 51, bear canine, apex grooved (Castle Creek site); 52, bear canine, split and ground (Canandaigua site); 53, bear canine, split and ground (Levanna site); 54, canine of immature bear, perforated through posterior wall only (Castle Creek site); 55, perforated dog canine (Canandaigua site); 56, grooved dog canine (Canandaigua site); 57, narrow polished long bone section, end flattened and expanded (Canandaigua site); 58, short tubular copper beads of beaten thick sheet metal (Canandaigua site); 59, circular ornament of marine (?) shell (Canandaigua site); 60, short, tubular, polished marine shell beads (Canandaigua site); 61, pendant in process from fresh-water mussel shell (Canandaigua site); 62, grooved pendant of conch columella (Canandaigua site).

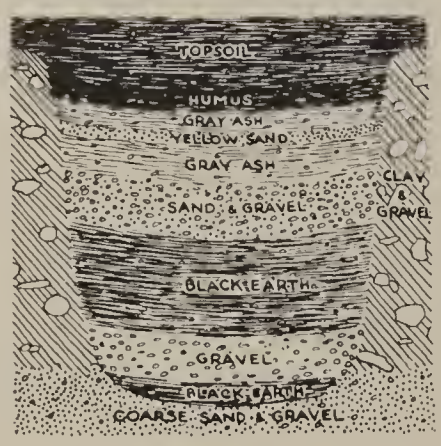
Plate 29.

Bone and Antler Artifacts of the Owasco Aspect

Creek site, the type station of the focus named therefrom. We are indebted to Mr. Fred A. Rider of Vestal for the necessary permission. In 1939 and 40, the remaining portion of the site was explored by the Broome County Historical Society of Binghamton, under the direction of its president, Mr. Foster Disinger, who very kindly allowed the writer to study the material and data secured, and furnished a number of photographs, some of which are reproduced herein with his permission.

The Castle Creek village, like the settlement on the Palmer farm at Willow Point, was well situated on a steep-sided gravel knoll 300 feet long and 110 feet wide, washed along its western base by Castle Creek, close to this stream's union with the Chenango, which flows about 100 yards to the east of the site. Some 3 miles northward, at Binghamton, the Chenango enters the Susquehanna.

Beneath a concealing surface mantle of plow-mixed humus and refuse, 6 to 10 inches thick, opened the 274 pits found by both parties. Occurring singly or in groups of 2 to 6 or more, clustered or strung out (see map, Ritchie, 1934, pp. 30-31), these circular excavations ranged from 2 feet 5 inches in diameter and 3 feet in depth to 4 feet 4 inches x 6 feet 5 inches, averaging 3 feet 6 inches x 4 feet. While the large majority were U-shaped in section, some had a slightly bell-like form, being wider at the bottom. Many penetrated the 5 to 6 foot clay and gravel cap of the knoll to the fine sandy-gravel subsoil.



Text figure 1.
Deep U-Shaped Cache Pit, Filled with Stratified Refuse. Castle Creek Site and Focus, Owasco Aspect

Diameter 3 feet 6 inches, depth 3 feet 10 inches.

Text figure 2.
Deep U-Shaped Cache Pit, Containing Stratified Refuse and Flexed Burial
Castle Creek Site and Focus, Owasco Aspect

Diameter 3 feet 4 inches, depth 4 feet. Layer of charred grass at bottom.

Beyond reasonable doubt the majority, if not all, were primarily cache pits, later serving as refuse repositories and in 36 instances as graves (text fig. 2). A partial lining of carbonized tufts of coarse grass, associated in certain examples with carbonized corn, sometimes in layers 6 or 8 inches thick, a few beans, acorns, butternuts and hickory nuts, occurred in 16 pits.

The refuse fill, commonly in strata of sundry depth and extent, and consisting of the usual ash of different colors, charcoal and black earth, plus not infrequent lenses of sand or wash from the pit sides (text fig. 1), produced much food animal bone, sometimes in masses

Plate 30. Bone Pins with Ornamented Heads
Castle Creek Site
Castle Creek Focus, Owasco Aspect

Fig. 1 is 4 1/4 inches in length.

of several quarts (Plate 42), mussel shells, great numbers of potsherds[1] and various bone and stone artifacts whole, broken or in process, with stone objects in the minority.

Inasmuch as a complete enumeration of types and frequencies is afforded by the trait table on pages 341-351, with most of the traits illustrated on Plates 7, 10-15, 21, 26-30, it is only necessary to mention, for emphasis, certain articles of special interest, viz., the sole example of Owasco effigy pottery on record (Plate 15); the antler celt sockets (Plate 29, fig. 23), of which 8 occurred;[2] the extraordinary bone pins with carved heads, represented by 6 examples (Plates 29, figs. 40-43;30); the 7 bear tibia beaming tools (Plate 28, fig. 48); the 3 antler picks (Plate 29, fig. 49); and particularly the charred textile remains, unique from the Owasco culture, and in the case of the set-line, the only known specimen in existence. Plate 40, figs. 1, 2, illustrate the two fragments of twined woven fabric which, like the section of braided selvage (Plate 40, fig. 3), may be of basswood fiber. A portion of a coiled basket, utilizing a warp or foundation of split hickory twigs and a weft of twisted Indian hemp fibers (Apocynum cannabinum),[3] is portrayed in fig. 5, while fig. 6 of the same plate (40) illustrates a piece of unique coiled material with cord binding-thread of Indian hemp fibers and stiff twig foundation element.

The amazing specimen pictured on Plate 41 is a set-line consisting of a hank of two-strand twisted cord made from the fibers of Indian hemp, twisted together in a clockwise direction, to which are attached at unascertainable intervals by means of dropper lines, 19 compound hooks, made from an unidentified species of hawthorn spikes, each about one inch in length.

This was found by Mr. John Swart, in charge of excavations in 1939 for Mr. Disinger, in pit 32, of which the following description is summarized from his field notes: depth 44 inches; upper 16 inches a dark gravel fill, capping 16-27 inches of black soil resembling wood mould, and containing many carbonized acorns (Plate 40, fig. 4) and sherds of 3 well-decorated pots. At 27 inches occurred an ash layer, 3-4 inches thick, containing more acorns, bone refuse and parts of some of the pots found in the layer above. Beneath the ash the sawdust-like layer of black substance occurred again for 5 inches, and in this stratum, sherds of one of the vessels found above again appeared, together with parts of 2 new vessels, a celt, a bar celt, and the set-line and fragments of the woven bag just described, the later being directly associated with carbonized acorns. The lower part of the pit was filled with a sterile yellow sand and gravel mixture.

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[1]From an examination of rim fragments it is estimated that approximately 1,000 vessels are represented in the sherd collections obtained by the Rochester Museum and Broome County Historical Society. (See restored examples on Plates 10-15).

[2]Present also on the Canandaigua site (Plate 29, fig. 24).

[3]Identification of textile substances by Dr. Volney H. Jones, Ethnobotanical Laboratory, University of Michigan. Aid in the analysis of the types was kindly given by Miss Gene Weltfish, Department of Anthropology, Columbia University.

One of the most important features of the Castle Creek station is the multiple stockade line, searched for at the writer's suggestion, found by Mr. Swart and excavated by him and Mr. Karl Schmitt, Jr., University of Chicago graduate student, who was in active charge of operations in 1940. The evidence for its existence, seen in part by the writer in the fall of 1940, is described by Messrs. Disinger and Schmitt as consisting of an inner line of post-molds, 3-5 inches in diameter, set in a ditch 8-12 inches wide and some 16 inches deep (Plate 39, arrows 3) and extending for approximately 400 feet around the entire northern and eastern peripheries of the site, which lack the very steep embankment found on the remaining sides. A narrow space or corridor separates this series from a second parallel line, nearly as long and of similar character, except that at irregular intervals the ditch is absent and large post-molds, up to 9 inches in diameter, stand close together. The third line, likewise parallel and distant about 6 feet, runs for only 150 feet along the eastern face of the hill below the crest on the upper slope, from which direction the site is most vulnerable to attack, due to the gradual declivity. The main entrance appears to have been about midway through the inner stockade on the east side.

Because of the confusing array of pit outlines and post-molds (Plate 39, arrows 1 and 2, respectively), possible lodge floors were hard to trace, but Mr. Schmitt succeeded in defining two groups, each forming about one-half a circle, and each associated with a circular basin-shaped hearth, about a foot across and 5 inches deep in the subsoil, filled with ashes, and placed near the center of what he opines to have been a roughly circular floor some 12 feet in diameter, very similar to those uncovered on the Canandaigua site (Plate 25, fig. 3).

Burials found on the site and on a low rise about 100 feet east, where pits were also present, totaled 42.[1] They were grouped in no regular cemetery, but were randomly distributed, 36, in fact, occurring in refuse pits (text fig. 2; Plate 42). The few departures from the flexed position comprise the compound bundle interment of three adult males and a child (Plate 44), a semisitting and a sitting adult (Plate 43), 8 extended skeletons of very young infants, and the inhumation of an adult skull only, containing 5 finger bones.[2] Grave goods, in the form of pipes and pots, accompanied only 5 individuals, all flexed, one a child (Plate 42).

Plate 45 pictures the double burial of a small breed of dog, resembling a terrier, which with another example unearthed here, constitutes the chief evidence for dog burial in this culture.[3]

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[1]More have since been found on the rise to the east while excavating for gravel.

[2]Ossuary burial of skulls containing toe or other bones is recorded for Algonquian sites in Maryland (Ferguson, 1940, p. 11).

[3]Broken bones of a small breed occurred in the refuse of the Canandaigua site. Dog burials will be mentioned later when other cultures are described.

Bainbridge Component (Plate 6, site 24)[1]

Only 23 miles distant, in an air line, from the Castle Creek site, with every essential feature of which it closely equates, is the Bainbridge village component, occupying the narrow top and upper slopes of a sand ridge lying parallel with and between the highway (Route 7) and the north bank of the Susquehanna River, 1 3/4 miles north of Bainbridge, Chenango County.

Except for an occasional surface implement, occupational traces were confined to pits, of which 43, scattered over an area 70 x 160 feet, were explored by the Rochester Museum in the summer of 1935, through permission of Mr. Jasper Partridge, who himself, previously and subsequently excavated a considerable number of others, mainly in a lawn area prohibited to us.

As at Castle Creek, these seemed to have been food caches, utilized later for rubbish repositories and graves. Charred corn over a grass and bark lining was preserved in two; two others yielded beans from the black bottom fill; while three sheltered flexed burials, without grave goods, unless a mortar lying over an infant's bones be so construed. In depth they ranged from 21 to 69 inches, the majority being 35 to 55 inches deep and 42 to 50 inches across the roughly circular mouth. A stratified condition was not uncommon and a few were solidly filled with mussel shells from the neighboring river, suggesting use as clam bake ovens (Plate 47). Deer bones, up to nearly half a bushel in volume, occurred sometimes in a solid layer, their appearance and finely broken condition suggesting the contents of a stew kettle.

Artifacts were relatively less numerous here than on the Castle Creek site, 39% of the pits being practically or entirely sterile. Of the industrial material, largely from the black fill, potsherds comprised the greater part, and it was possible to restore completely 3 vessels, two being illustrated on Plate 16. In quality of ware,--a medium grit-tempered, well-levigated and-fired paste, with a hardness of 3 to 5 on the mineral scale; vessel form,--round bottom with constricted neck and in-or out-sloping rim, often collared and with rim points, nodes or bosses; and surface treatment and decoration,--cord-or fabric—wrapped, paddle-malleated, sometimes subsequently partially smoothed body with dentate stamp-executed lines, triangles, chevrons, herringbones, plats, etc. by way of design, a few cuneiform punctates, and rudely incised chevrons,--the Bainbridge and Castle Creek pottery agrees perfectly (Compare Plates 16, 46 with plates 10-14, 21; also Plate 18).

Among the pipes, 3, one a fragment, are noteworthy for the human face effigies in low relief which embellish them (Plate 7, figs. 16, 17), a feature reminiscent of the Iroquois. At Castle Creek, human faces in intaglio occurred on one pipe (Plate 7, fig. 14).

A pipe found by Mr. Partridge is remarkable in possessing, in addition to two effigy faces, a large loop extending from either side of the bowl and meeting over the stem. There was also a single plain bowl fragment of gray steatite in one of the Bainbridge pits.

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[1]Ritchie, 1939, pp. 86-90.

Plate 31

Flexed Burials
Canandaigua Site
Canandaigua Focus, Owasco Aspect

1, tightly flexed adult male (28) accompanied by bone scraper and unworked bear radius, and female (29), without grave goods; 2, adult male in loosely flexed position, arrows indicate two of eleven arrowpoints found embedded in or among the bones (see Plate 32, figs. 1-11).

Plate 32. Arrowpoints Found Embedded in and Among Human Bones
Canandaigua Site
Canandaigua Focus, Owasco Aspect

1-11, from burial 9, 10 is the manubrium, 11 the left scapula of the skeleton; 12-16 from burial 36, 12 is the fifth lumbar vertebra with two embedded points; 17-27, from burial 39, 26 is the fourth dorsal vertebra, 27 the fifth and sixth crevical vertebrae.

For full account and probable explanation see Ritchie, 1937, pp. 81-90.

Among the remaining artifact types (see trait table, pages 341-351, for full inventory) mention should be made of the thick chipped and pecked sandstone implement with worn edge, evidently a hoe (Plate 27, fig. 12), and the antler comb with ornamental top, very like early Iroquois examples (Plate 29, fig. 33), both recorded for the first time from an Owasco station.[1]

Damascus Component (Plate 6, site 25)

So little excavating has yet (spring 1941) been done on this station of unknown extent, situated on the east bank of the Susquehanna between Windsor and Damascus, Broome County, that nothing can be recorded beyond the statement, based upon an examination of pottery found by Mr. Jasper Partridge of Bainbridge, that it pertains definitely to the Owasco Aspect and probably to the Castle Creek Focus.

Lake Champlain (Headquarters Component) (Plate 6, site 27)

This small site was found and excavated in 1937-38 by the Champlain Valley Archeological Society, in a field occupied by their headquarters house about half a mile north of Fort Ticonderoga, Essex County. It lies upon a small sandy rise, a few hundred yards west of the Lake Champlain shore and close to a small dry stream bed.

The writer's thanks are expressed to Mr. John H. Bailey, in charge of excavations, for his courtesy in showing him the site and material, and providing the data for his records.

Twenty-three round pits, with a maximum depth of 4 feet were opened and found to contain little refuse. In a small recess off the side of one occurred an intact vessel; only 5 1/4 inches high, having an elongated body, round base, constricted neck, everted rim with numerous castellations and a prominent bead or ridge 1/4 inch below the lip. The body is fabric-impressed, the neck and rim ornamented with line, herringbone. and plat motifs in dentate-stamp work.

A portion of a vessel exhibits, in connection with impressed embellishment, rude incised triangles of identical character with those found at Castle Creek and Bainbridge.

Broad triangular points with concave base predominate in the collection, but a stemmed and a corner-notched point occur. There are also a lanceolate knife, a side-notched drill, several round end scrapers, a celt bit, pebble hammerstone of flint, an anvilstone, and many potsherds.

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[1] A small rude comb-like device came from the Canandaigua site (Plate 29, fig. 32).

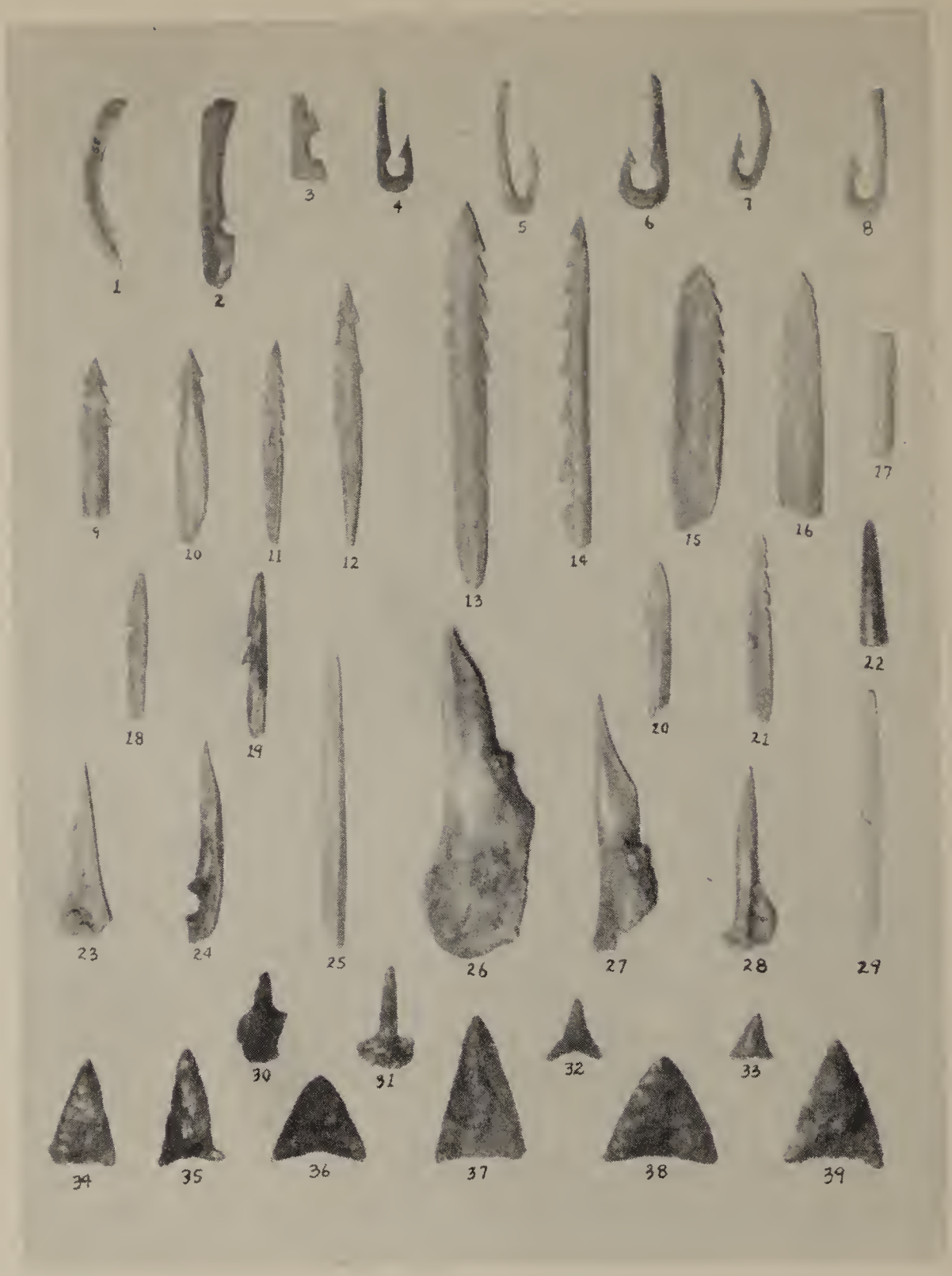

Plate 33. Bone, Antler and Chipped Stone Implements
Jack's Reef Site
Canandaigua Focus, Owasco Aspect

1, beaver incisor knife or scraper, split, with edges ground; 2, 3, discards from manufacture of barbed fishhooks by drilling and cutting; 4-8, barbed fishhooks, with straight or knobbed shank; 9-13, 15, 16, 21, multiple bilaterally barbed harpoons, with weak or strong barbs; 14, multiple unilaterally barbed harpoon, round in section; 17, cylindrical antler flaking tool; 18, 20, single unilaterally barbed points; 19, multiple unilaterally barbed point; 22, conical antler arrowpoint; 23, awl, from goose humerus; 24, awl, from lynx ulna; 25, fragmentary polished splinter awl or point; 26, 27, deer ulna awls; 28, awl, from turkey tibia; 29, portion of flat needle; 30, drill, based on rough spall; 31, drill, with expanded base; 32, drill, with Y-shaped base; 33-39, triangular arrowpoints, with concave base (35, is "eared").

Collection of Kenneth Palmer, Syracuse, New York.

Plate 34. Rim Potsherds, Clay and Stone Pipes

Jack's Reef Site

Canandaigua Focus, Owasco Aspect

1, oval dentate impressions on fabric-malleated surface, everted rim, flat outsloping lip; 2, banded oval dentate impressions on rim and oblique rows of same on incipient collar, everted rim, flat outsloping lip; 3, band and herringbone design in oval dentate impressions, everted rim, flat outsloping lip; 4, cord-malleated surface, straight rim, flat lip; 5, cross-hatch design of oval dentate impressions, straight rim, flat outsloping lip; 6, cord-wound-twig impressions, straight rim, flat lip; 7, dentate-stamped herringbone design, everted rim, flat outsloping lip; 8, fabric-impressed surface, faint dentate-stamp overlay in oblique lines, straight rim, flat lip; 9, band and herringbone designs in oval dentate impressions, everted rim, flat outsloping lip; 10, dentate-stamped chevron and band design, everted rim, flat lip; 11, 13, 14, 16, plain pottery pipes, of obtuse angle elbow type (13 an unusual variant); 12, polished obtuse angle elbow pipe of dark steatite, stem trianguloid in section, with notched bead or ridge on either side; 15, incomplete pottery pipe, stem oval in section, tessellated design on bowl, impressed rectangular design on stem at bowl base.

Collection of Kenneth Palmer, Syracuse, New York.

Craniometric Data[1]

Representing this focus there are 7 male and 10 female skulls (13 from Castle Creek, 3 from Willow Point, and one from Bainbridge). The males are almost equally divided between dolichocephaly and mesocephaly, affording a mean index of low mesocephaly (75.1, range 70.5 - 77.7, average deviation 1.7), while the female crania, with two exceptions (dolichocephalic and brachycephalic) are of moderate length (mean cephalic index 77.0, mesocephalic, range 71.8 - 82.5, average deviation 2.0. In the males the vault is mainly high (mean height-length index 78.0, hypsicephalic, range 72.5 - 84.4, average deviation 3.4); in the females it is of moderate elevation (73.4, orthocephalic, range 70.1 - 77.0, average deviation 1.4). The male face[2] is quite variable in height (mean total facial index 85.6, mesoprosopic, upper face 50.3, range total face 80.1 - 97.6, average deviation 6.4), the female face[3] less so, being for the most part high and narrow (90.9, leptoprosopic, upper face 55.0, range total face 86.0 - 96.7, average deviation 2.9). Male orbits,[4] with a single exception, are of moderate height (mean orbital index 81.8, mesoconch, range 72.2 - 89.8, average deviation 5.2), nearly the same being true for the female series[5] (one chamaeconch, one hypsiconch) (mean index 82.8, range 75.0 - 89.7, average deviation 3.1). The nasal opening in both sexes is overwhelmingly broad (mean nasal index, male, 52.6, platyrrhine, range 48.0 - 56.5, average deviation 2.1; female, 57.7, platyrrhine, range 57.1 - 62.5, average deviation 3.7).

Canandaigua Focus

St. Helena Component (Plate 6, site 1)

This camp site is situated on the level sandy alluvial flood plain of the Genesee River, on the west side, just below what is known as the St. Helena bridge, within the confines of Letchworth State Park, Castile Township, Wyoming County. Evidently a large portion has been destroyed by the erosion of the terrace on which it is situated and its discovery followed exposure of pits in the river bank.

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[1]The craniological discussions in this work are greatly condensed to fit its scope and purpose. Important morphological descriptions are also perforce omitted. It is planned subsequently to issue a more comprehensive report on the studies of the material in these series.

[2]5 examples.

[3]4 examples.

[4]6 examples.

[5]6 examples.

Excavations conducted by the Rochester Museum in September 1934, through the courtesy of the Rochester Gas and Electric Corporation uncovered 15 pits of varying size, most of them probably corn caches, containing but little dark soil and industrial material, and 3 much-decayed adult burials.

Sherds of a number of coarse to medium grit-tempered pots, with medium to thick walls, were found and it was possible to restore one vessel with conoidal base, constricted neck and straight rim, ornamented with seven large cord-imprinted chevron and striated band designs, shown on Plate 8. Circular and triangular punctates (Plate 20, fig. 4) and the more common dentate-stamp work occurred on the sherds recovered (Plate 20, fig. 3).

Other traits comprise the multiple-pitted pebble, faceted hammerstone (Plate 27, fig. 5), cylindrical pestle, anvilstone, flat whetstone, muller, notched netsinker, thick poll and thin poll celt, triangular arrowpoint (Plate 26, fig. 17), side-notched point, side scraper (Plate 26, fig. 37), flake knife (Plate 26, fig. 25), drill with T-shaped base (Plate 26, fig. 49), strike-a-light (?) (Plate 26, fig. 54), splinter awl, and obtuse angle elbow pipe of clay.

The relatively rude character of the pottery suggests that this may be an early component of this culture in the Genesee Valley.

Fall Brook Component (Plate 6, site 2)[1]

Another small Owasco camp site occupied a prominent gravel knoll, since removed, bordering the flood plain of the Genesee, near the mouth of Fall Brook, on the Geneseo - Mt. Morris road, Livingston County. Burials and refuse of three prehistoric cultures were present here, the Pt. Peninsula and Iroquois, in addition to the Owasco. Unfortunately, most of the earliest graves, situated on the east side of the hill, were destroyed in digging gravel prior to the excavations of the Rochester Museum in April, 1937, through the courtesy of Mr. William P. Wadsworth of Geneseo, during which 21 graves and 12 refuse pits came to light in the north end of the knoll.

Several burials without grave goods may have pertained either to the Owasco or Iroquois (Seneca ?) occupation, but burial 7, an adult male, closely flexed, with hands before face, lying 3 feet 7 inches below the surface and partially covered with small boulders and a layer of gray clay, was clearly of the former culture, as the pipe, illustrated in Plate 7, fig. 12, reveals. This and 2 bone fishhooks lay before the face, while upon the hands reposed a polished splinter awl and a chipped bone flaking tool.

The contents of nearby pit number 3, 3 feet 4 inches in diameter and 2 feet 3 inches deep, link it culturally with this burial, for among a number of nondiagnostic artifacts there were two broad triangular points, a side-notched point, a fragmentary elbow pipe, and the sherds of a large restorable vessel, similar in shape to the St. Helena pot, but fabric-impressed over the whole exterior.

Iroquois vestiges were present in other pits but no proof of the contemporaneity of the two people came to light.

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[1]Ritchie, 1937, pp. 126-127.

Golah Components (Plate 6, sites 3 and 4)

Near the confluence of Honeoye Creek and the Genesee River (Monroe County), is the railroad junction known as Golah. The surrounding territory presents many sandy knolls and ridges bordering the broad bottom lands of the river, on one or another of which camp sites of nearly every occupation known from western New York have been found and dug by collectors over a period of many years. Two of these sites, lying on opposite sides of the creek, on the Klink and Rapp farms respectively, have produced Owasco material from pits and graves. A selection of this, excavated in part by the museum, is illustrated on Plate 24 and described in the caption. One might assume from the degree of ceramic refinement and the general similarity of the whole complex to the congeries from the Canandaigua component, next to be described, that these Golah settlements post-date the camps up river, just referred to, and approximate the former in age.

Canandaigua Component (Plate 6, site 5)[1]

Just beyond the western corporate limits of the town of Canandaigua, Ontario County, and 1 1/4 miles northwest of the foot of Canandaigua Lake, lies the largest component of this focus. It covers some 3 acres of gently sloping ground (Plate 25, fig. 1), flanked on the east and northeast by higher ground and on the south by a shallow gully. A considerable portion of it was explored in 1934 by the Rochester Museum, through the kindness of Mrs. Charles Sackett, its owner.

Text figure 3.
Restored Flat-Bottomed Beaker
Canandaigua Site and Focus, Owasco Aspect
Height 3 3/4 inches

The principal feature was an ovate moat or ditch, approximately 243 x 202 feet, pierced by 3 openings, tnought to be gateways. Portions of 6 surrounding and one intersecting ditch suggested either supplementary defense lines or more probably palisades constructed subsequently as the village expanded. Plate 25, fig. 2 illustrates a section of the V-shaped main moat, which varied from about 7 to 10 feet in breadth and 2 to 4 feet in depth, and was found filled with refuse, stratified in most places (text fig. 4), from which came much industrial material, carbonized corn, beans, and various nuts.

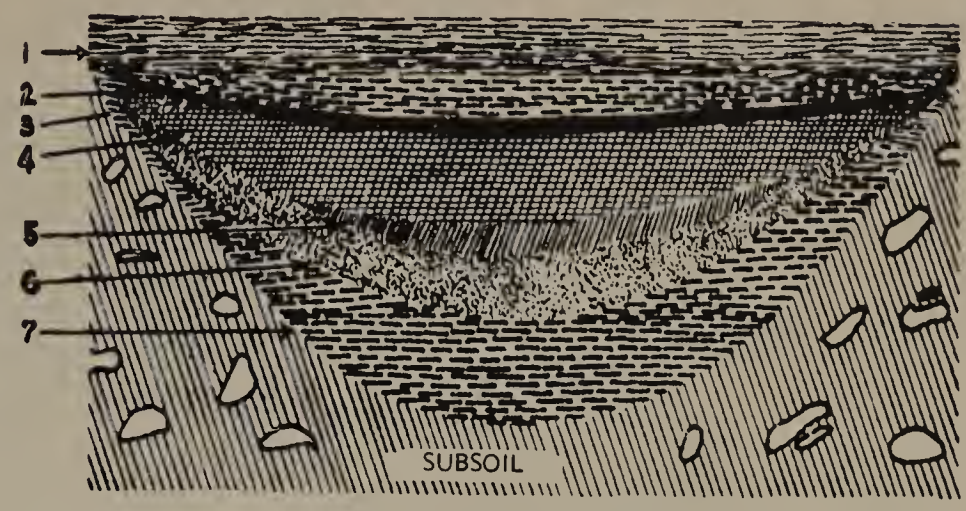
Pits were infrequent, the 11 uncovered being broader and shallower than the storage caches of the Castle Creek Focus (text fig. 5). Small hearths abounded and 4 fire-beds, or

[1]Ritchie, 1936.

broad, shallow, saucer-shaped depressions filled with charcoal and ashes, were found. Three circular hut floors, about 10 feet in diameter, with central hearths, were traced on the light colored clay subsoil by means of post-mold patterns, each support being approximately 3 1/2 inches in diameter (Plate 25, fig. 3).

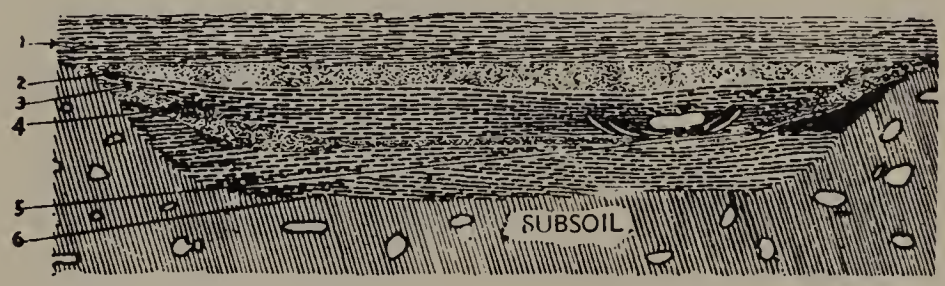
A total of 57 flexed burials (Plate 31, fig. 1) came from two cemeteries close to the site, but only 6 possessed mortuary accompaniments, a small pot, a deer phalangeal cone, a turtle shell rattle, and a hematite paintstone being the most important. Six skeletons, all male, had from one to 11 triangular arrowpoints embedded in or among the bones (Plate 31, fig. 2).

The large variety and number of industrial objects is completely listed with frequency in the trait table on pages 341-351 and illustrated in part on Plates 7, 22, 23, 26-29 and text fig. 3. Comparative studies would indicate that the Canandaigua site, the largest component of the focus of the same name, represents the most advanced degree of development of the focus thus far discovered.



Text figure 4.
Moat Section
Canandaigua Site and Focus, Owasco Aspect

Breadth 7 feet 11 inches, depth 3 feet 7 inches. 1, topsoil, 6 inches; 2, black earth, 4 inches; 3, black earth and charcoal, 1 inch; 4, gray ash, 11 inches; 5, white ash, 3 inches; 6, sandy-clay, 7 inches; 7, black earth, 11 inches.



Text figure 5.
Shallow Pit
Canandaigua Site and Focus, Owasco Aspect

Length 13 feet 6 inches, breadth 5 feet, depth 2 feet 8 inches. 1, topsoil, 9 inches; 2, sandy-clay, 4 inches; 3 gray ashy soil containing many potsherds, 10 inches; 4, sandy-clay, 4 inches; 5, mass of clam shells, 4 inches; 6, gray ashy soil, 10 inches.

Waneta Lake Component
(Plate 6, site 6)

On the west shore of Waneta Lake, Schuyler County, about half a mile from the head, a small Owasco camp site of the early focus was excavated by the Rochester Museum in 1928, on the farm of Mr. Lee Myers. From a refuse midden, averaging a foot in depth, came a bolas-stone, a plano-convex adze, a celt, several broad triangular arrowpoints, and a number of dentate-stamped potsherds typical of the Canandaigua Focus. A much-crushed flexed adult skeleton, without grave goods, was uncovered near the base of the deposit.

Plate 35. General View of Hilltop Workshop Site, Looking Southeast
Delaware County
Canandaigua Focus, Owasco Aspect

Arrows indicate two of several low rises along brook in swampy valley floor, which are heavily strewed with refuse of flint knapping.

Plate 36. Workshop Refuse on the Hilltop Site
Canandaigua Focus, Owasco Aspect

A small area of the site's surface after desodding, showing multitude of flint flakes, chips, and other rejectage.

Levanna Component (Plate 6, site 7)[1]

This large settlement site occupies a triangular piece of ground between two gullies, one bearing a small brook, situated high on the valley slope along the east side of Cayuga Lake, 1 1/4 miles east of Levanna, Ledyard Township, Cayuga County, on the Frank Sherman farm. Although the general refuse mantle is thin, hillside dumps up to 20 inches in depth were excavated by the Rochester Museum in 1927, following investigations made by Parker for the State Museum in 1923, and the artifacts inventoried in the trait tables, pages 341-351 and partially illustrated on Plates 7, 9, 26-29, were found.

A number of broad shallow pits, similar to those of the Canandaigua site, occurred, and an oval bed of fire-broken stones, 16 feet long, 7 feet wide, and 10 inches deep, was exposed. Close to one end was a circular pit 3 feet in diameter and 6 feet deep, containing black earth and broken stones, overlying a large hearth. This type of structure, having a rather wide distribution in time and space, was interpreted as a meat roasting or barbecue platform. On the Willow Point (Clark) site, previously referred to, a few burned animal bones and a broken arrowpoint occurred among charcoal fragments on the stones constituting a similar but smaller platform.

Five flexed skeletons, associated in at least two cases with hematite paint, are said to have been found in the vicinity in digging gravel, but extensive searth about the site failed to yield other burials.

The Levanna station, like the much smaller Waneta Lake component just described, produced the bolas-stone and similar relatively crude ware (Plate 9) when compared with the probably younger Canandaigua site.

Owasco Lake Component (Plate 6, site 8)[2]

In Lakeside Park, along the outlet of Owasco Lake, is the first recorded site of the culture named Owasco. Refuse covering the slope of an old lake terrace, 25 feet above the present water level, yielded to the excavations of Messrs. A. C. Parker, then (1915) State Archeologist, and E. H. Gohl of Auburn, a large quantity of potsherds, from which one large vessel, similar in form and decoration to the Levanna pot (Plate 9), was restored by Mr. Gohl (see Parker,[3] Plate 107).

Other objects, illustrated in part by Parker,[4] comprised pottery pipes of the obtuse angle elbow variety, triangular arrowpoints, an ovate knife of chalcedony, oval end scrapers,

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[1]Ritchie, 1928.

[2]Parker, 1922, pp. 340-343.

[3]Ibid., 1922, p. 341.

[4]Ibid., fig. 47 and Plate 108, pp. 342, 343.

Plate 37

Rejects and Artifacts
Hilltop Workshop Site
Canandaigua Focus, Owasco Aspect

1, 2, chert pebbles, representing raw material, from gravel bank near Ouleout Creek, about a mile from the site; 3, worked chert pebble from site; 4, large flakes or spalls formed in trimming pebbles to form cores like fig. 5, which were reduced through successive stages, 6, 7, 9, to arrowpoints like 11, 12, 20, 21; 8, chips and flakes thrown off in the intermediate chipping stages (6, 7, 9); 10, 19, points broken in process; 13, drill, with T-shaped base; 14, drill, with expanded center, pointed at either end; 15, 17, 18, oval end scrapers (15, with serrated edges); 16, round end scraper, with serrated edges; 22, combined hammer and anvilstone; 23, sinewstone, with multiple deep grooves; 24, drill, based on rough spall; 25, drill, with expanded trianguloid base; 26, trianguloid knife; 27, broad, stemmed knife (26, 27, from Wilbur Lake site but similar to examples in R. B. Hill collection from Hilltop site); 28, strike-a-light (?); 29, trianguloid end scraper.

Plate 38. Artifacts from Hilltop Workshop Site
Canandaigua Focus, Owasco Aspect

1-4, dentate-stamped potsherds; 5, 11, 16, strike-a-lights(?); 6, 7, 12-14, oval and round end scrapers, several with serrated edges; 8, drill, with expanded base; 9, drill, triangular, isosceles, concave base; 10, drill, Y-shaped base; 15, 21-25, 27, 28, triangular arrowpoints, concave base; 26, triangular arrowpoint, V-shaped concave base; 17, incomplete drill, with expanded trianguloid base; 18, trianguloid end scraper; 19, broad, stemmed argillite point, probably derived from older culture; 20, point fragment of white quartzite; 29, pottery pipe stem; 30, pottery pipe, of obtuse angle elbow form, embellished with mammiliform nodes having short radiating lines; 31, 32, rectangular slate pendants, with multiple-grooved top; 33, rectanguloid celt; 34, 35, sinewstones, with multiple shallow and deep grooves, respectively; 36, bipitted hammerstone; 37, plano-convex adze.

Collection of Frank M. and Roland B. Hill, Oneonta, New York.

mortars, anvilstones, pebble and pitted hammerstones, notched netsinkers, a large discoidal stone pendant centrally perforated, a pendant or gorget in process, a split deer metapodial awl, deer ulna awls, polished splinter awls, a turkey metatarsus awl, a fox ulna awl, multiple bilaterally barbed harpoon heads, cylindrical antler flaking tools, thin curved bone needles, tubular bone beads, and deer phalangeal cones.

Numerous pits, dog remains, charred corn and hickory nuts, and a possible circular lodge floor, saucer-shaped, 14 feet in diameter, with central hearth depression paved with flat stones, were also found, but no burials.

Jack's Reef Component (Plate 6, site 9)

This large and important village site was excavated over a period of several years by Messrs. Earl Mann of Jordon, New York and Kenneth Palmer of Syracuse, both of whom kindly permitted the writer to examine and photograph their collections. Approximately an acre and a half of the low terrace bordering the south bank of the Seneca River, just east of the mouth of the Carpenter Brook, Onondaga County, was covered with refuse up to 3 feet in depth, from which the bulk of the material came, the remainder being derived from shallow pits opening from the refuse mantle into the subsoil.

The situation of the site along former large rifts or shallows in the river,[1] where were speared even in historic times great numbers of eels and salmon, the latter on their way upstream to spawn in the tributaries of the river and Oneida Lake, with which it is connected through the Oneida River, attracted earlier settlers as well, and vestiges of every culture known to the area occur here. Very fortunately, as previously stated, a cremated Pt. Peninsula burial, well provided with mortuary furnishings (Plate 69) was found here beneath a partial stone covering, in a subsoil pit capped with undisturbed Owasco refuse, and this constitutes our strongest stratigraphic evidence for the temporal relationship of these two occupations.

While data concerning this station are far from adequate the following partial inventory of culture elements may safely be given: several hundred broad triangular points, equilateral and isosceles, with straight or concave base (one eared) (Plate 33, figs. 33-39); 2 side-notched points; a few drills based on rough spalls (Plate 33, fig. 30) or with expanded (Plate 33, fig. 31) or Y-shaped base (Plate 33, fig. 32); numerous cylindrical and 9 conical pestles; several small rectanguloid and trianguloid celts and adzes; several fragmentary pendants or gorgets, oval with truncated ends; 2 stone phallic effigies; a bear tibia beaming tool; many worked beaver incisors (Plate 33, fig. 1), including one with serrated incisal edge; perforated or grooved bear canines and a grooved elk incisor; many curved flat needles, with gouged eye near center (Plate 33, fig. 29); conical antler arrowpoints (Plate 33, fig. 22);

[1]Destroyed by Barge Canal construction.

arrowpoints fashioned from the terminal phalange of the deer; multiperforated whistles, one with only a rectangular opening near one end;[1] cylindrical antler flakers (Plate 33, fig. 17); numerous (approximately 100) whole, broken or unfinished barbed bone fishhooks, made by gouging (not drilling) and cutting (Plate 33, figs. 2-8); 3 unbarbed fishhooks; awls from deer ulna (Plate 33, figs. 26, 27), fox ulna (Plate 33, fig. 24), goose humerus (Plate 33, fig. 23), turkey tibia (Plate 33, fig. 28), long bone splinters (Plate 33, fig. 25), and bones of unidentified birds and mammals; scores of multiple bilaterally barbed harpoons, with broad, flat or curved, straight-based or bluntly pointed tang (Plate 33, figs. 9-13, 15, 16, 21); several unilaterally barbed harpoons with bold barbs, resembling Pt. Peninsula forms (Plate 33, fig. 14); and obtuse angle elbow pipes of clay (Plate 34, figs. 11, 13, 14-16) and stone (Plate 34, fig. 12), the former having a wide variety of stem forms, varying in section from round through oval, ovate and ellipsoidal, to rhomboidal, compressed rectanguloid, and trianguloid, some quite similar to specimens from Levanna (Plate 7, fig. 7).

The numerous potsherds are all grit-tempered, medium coarse to medium fine in texture, and thick to medium thin. Body sherds are all cord-or fabric-roughened and all bases found are pointed. Both straight and outsloping rims occur, and decoration, where present, consists of simple linear, herringbone, chevron, or cross-hatch designs, executed with cord-wound twig or dentate stamp (Plate 34, figs. 1-10).

Large numbers of hearths and shallow pits and some post-molds were seen by the excavators, but these were not traced. Three flexed burials came to light in the refuse, one accompanied by two pipes (Plate 34, figs. 13, 14), but a cemetery was not located.

The most extraordinary feature of the site is the abundance of fishing gear, literally hundreds of harpoons whole and fragmentary and nearly 100 fishhooks, represented by complete, broken, and rejected specimens, having been found; and this fact finds readiest explanation in the situation of the village close to swift shallows and pools in the river. Only one other Owasco site known to the writer has produced the barbed fishhook. This too, was originally situated at an extensive rift in the Oneida River at the outlet of Oneida Lake, now part of the Barge Canal channel. Deep deposits evidently pertaining to several cultures were dug into on this site, then known as Iroquois Island, now as Smith's Island, at Brewerton, Onondaga County, by Dr. William B. Hinsdale of Syracuse and Mr. A. H. Waterbury of Brewerton, both deceased. Now occupied as a home site, the island can no longer be explored,[2] but some of the material obtained, including Owasco type potsherds, broad multibarbed harpoons, ornamented obtuse angle elbow pipes, and several barbed fishhooks from the Water-

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[1]Shorter but otherwise like figs. 326 (Plate 34) and 327 (Plate 35) of Beauchamp, 1902, both found in a grave at Jack's Reef, probably on this site.

[2]Through the great generosity of Mr. and Mrs. H. W. Smith of Syracuse, whose summer home occupies the island, two large test pits were sunk here by the museum in the summer of 1942. Remains of several cultures, largely disturbed by prehistoric Iroquois pits and burials, were found. Further work is planned for 1943.

Plate 39. Portion of North End of Castle Creek Site
Cleared of Refuse Mantle
Castle Creek Focus, Owasco Aspect

Pit tops (1), post-molds (2), and segments of stockade line (3), string-outlined.
Photograph by Foster Disinger, Binghamton, New York. Reproduced by courtesy of Mr. Disinger and the Broome County Historical Society.

bury collection are owned by Mr. Charles A. Denman of Brewerton. Other similar hooks from the same site are illustrated by Beauchamp.[1]

These objects have parallels in New York from the earlier Kipp Island site (Pt. Peninsula Focus) (Plate 62, figs. 11, 12) and from certain later precontact Iroquois stations in the central and northern parts of the state.[2]

Pillar Point Component (Plate 6, site 10)

On Pillar Point, jutting into the foot of Lake Ontario about 5 miles southwest of the village of Dexter, Jefferson County, is situated the much-dug site to be described. It lies in a level pasture close to the low lake bluff and was for several years prior to the brief investigation of the Rochester Museum in August, 1935, intensively worked by collectors. The material from this place seen by the writer in the museum of the Jefferson County Historical Society at Watertown, was obtained by Messrs. George K. Bates of Dexter and Arthur R. Knapp of Watertown.

Its source, confirmed by the museum excavations, was a shallow refuse mantle and broad shallow pits. The trait inventory as far as known, comprises the following; triangular arrowpoints; a broad stemmed point with rounded base; triangular scrapers; strike-a-lights (?); splinter and deer ulna awls; club (?) points made from sharpened beam sections of deer antler; deer phalangeal cones; split beaver incisor tools; conical antler arrowpoints; cylindrical antler flakers; a box turtle carapace bowl (fragment); multiple bilaterally barbed harpoons, some double-ended; pendants from human skull bones (frontal and parietal); a conch columella bead, about 1 3/4 inches long; 4 obtuse angle stone pipes, 3 of dark steatite, the other of crystalline rock, 2 with flattened stems and quite similar to Plate 34, fig. 12 from Jack's Reef; and many potsherds of medium fine to fine texture, medium thin to thin, prevailingly dentate-stamp-ornamented in the familiar motifs. A number of rim sherds, however, bear a row of mammiliform or oval bosses, about one inch below the lip, formed by punching from the interior. One sherd is decorated with small crescentic punctates, another has an appliqued bead upon the rim, and one weak castellation is present in the series.

One disturbed flexed burial, without grave goods, came from a relatively deep layer of refuse (18 inches), but persistent efforts to locate a cemetery bore no fruit.

On the whole this site seems relatively late, perhaps coexisting with the Canandaigua village.

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[1]Beauchamp, 1902, Plate 22, figs. 212, 215, 216. See Plates 23, figs. 232, 233, 236; 24, fig. 240; 25, figs. 246, 248; 26, figs. 251, 252, 257; 27, figs. 259, 260, 263-265 for harpoons probably from this site.

[2]Ibid., Plate 22, figs. 211, 214, 221, 222.

Plate 40.

Carbonized Vegetal Material
Castle Creek Site
Castle Creek Focus, Owasco Aspect
About two-thirds natural size

1, 2, fragments of twined woven textiles, of basswood fiber (?); 3, section of braided selvage, of basswood fiber (?); 4, carbonized acorns; 5, fragment of twined basketry, split twig foundation, twisted cord weft of Indian hemp fibers (Apocynum cannabinum); 6, piece of unique coiled material with cord binding-thread of Indian hemp fibers and stiff twig foundation element; binders interlock with each other and merely enclose foundation but do not pass through it.

Photograph by Foster Disinger, Binghamton, New York. Reproduced by courtesy of Mr. Disinger and the Broome County Historical Society.

Collection of the Broome County Historical Society, Binghamton. New, York.

Plate 41. Carbonized Set-line and Hooks
Castle Creek Site
Castle Creek Focus, Owasco Aspect

Two-strand twisted line of Indian hemp (Apocynum cannabinum) and 19 compound hooks made from two hawthorn (sp. ?) spikes. Arrow in fig. 2 indicates point of attachment of dropper line. Hook length about 2.5 cm.; cord diameter about 1 mm.

Photograph by Foster Disinger, Binghamton, New York. Reproduced by courtesy of Mr. Disinger and the Broome County Historical Society.

Collection of the Broome County Historical Society, Binghamton, New York.

Norwich Component (Plate 6, site 11)

Some 5 miles from Norwich, Chenango County, is what is locally called the White site, apparently a rather extensive village component, situated on a piece of level ground, bordered by a brook, high among the hills lining the Chenango Valley.

When visited by the writer in 1935 it had literally been dug to pieces, open pits lying on every hand. Thirty of considerable size, apparently cache pits, comparable to those down river at Castle Creek, were counted.

Mr. Burr Andrews of Norwich, who has the largest collection from this station, courteously permitted the writer to make notes and photographs, from which the following list of artifacts has been compiled: hundreds of broad isosceles and equilateral triangular arrowpoints, mainly with concave base; a few pentagonal-shaped triangular points with concave base; about 20 side-notched points (a large number for an Owasco site); hundreds of oval and round end scrapers; 12 strike-a-lights (?); approximately 60 drills of sundry form (based on rough spall, with expanded base, expanded T-and Y-shaped bases, expanded side-notched base, expanded base with rectangular lateral projections); several multiple-grooved sinewstones; a tubular pipe of chlorite schist with expanded bowl decorated with incised parallel lines; a plain, rude, obtuse angle, pottery pipe; a one-holed, rectangular pendant of red slate with grooved top (similar to figs. 31, 32 of Plate 38), and fragments of several others; several celts and plano-convex adzes; unpitted hammerstones; and many sherds of medium coarse to medium fine pottery, decorated with cord-wound stick and dentate stamp, in line, plat, and herringbone patterns.

No burials are known to have been found on this site, which in situation and cultural content parallels rather closely the next two stations to be described.

Wilbur Lake Component (Plate 6, site 12)

Close to a small brook emptying into the pond known as Wilbur Lake, a few miles from Oneonta, Otsego County, is a site of no great extent, perhaps a camp, on which some excavations were carried out by the Rochester Museum in 1935.

From 7 small pits were recovered 2 rude sandstone disks, about 2 inches in diameter; a conically pitted flat piece of sandstone; several abrading stones, one incised (Plate 27, fig. 10); 3 knives, one lanceolate with rounded base (Plate 26, fig. 28), another broad and stemmed (Plate 26, fig. 27), the third trianguloid (Plate 26, fig. 26); about 30 broad triangular points (Plate 26, figs. 9, 11); 10 oval and round end scrapers; 4 drills of several forms (based on rough spall, expanded and Y-shaped base); a strike-a-light (?) (Plate 26, fig. 55); and approximately 50 dentate-stamped potsherds with simple linear and herringbone decoration.

Mr. Roland B. Hill of Oneonta, to whom we are indebted for knowledge of this site, has over 50 chipped stone objects of the same kinds as described, and more than 100 potsherds found here.

Hilltop Workshop Component (Plate 6, site 13)[1]

This extraordinary station is situated high upon the broad summit of a hill rising atop the great ridge forming the watershed between the Susquehanna and Delaware rivers, which course through their ancient valleys nearly 1,000 feet below and 4 and 10 miles distant respectively. Here in a shallow vale flows a small, nameless, spring-fed brook, which after several miles finds its way into a branch of Ouleout Creek, a tributary of the Susquehanna (Plate 35). Bordering the marshy brookside are several low rises or "islands," elevated a foot or so above the swale, and roughly from a dozen to 20 feet across, upon which stand the rotting stumps of large pine trees. Everywhere upon these rises and the adjacent lower slopes of the hill, the black soil was found to be thickly strewed with myriads of chert flakes, chips, arrowpoints-whole, broken or rejected in process-,drills, and scrapers (Plate 36).

Through permission obtained by Mr. Roland B. Hill of Oneonta, and with his active aid, the museum party spent several days in excavating unransacked portions of this site. Six to 8 inches of humus and refuse invested the "islands" and approximately 2 inches less covered the occupied portion of the hillsides. Every disturbance of this black earth brought up a tingling mass of fractured flint by far the bulk of which consisted of rejectage pertaining to every state of manufacture of projectile points (Plate 37).

Briefly listed and described, the material from this site found in our investigations, and previously collected by Mr. Hill and several other persons whose collections were examined, comprises several hundred intact arrowpoints of triangular form, perhaps 1 to 2 1/2 inches in length, mainly with concave base (Plates 26, figs. 15, 23; 37, figs. 11, 12, 20, 21; 38, figs. 15, 21-28); over 3,000 broken or discarded points of similar character (Plate 37, figs. 10, 19); 3 weathered stemmed points of argillite, possibly surface finds from an older culture picked up by the site's inhabitants (Plate 38, fig. 19); about 12 thin trianguloid or stemmed knife blades; approximately 150 drills of several types, based on a rough spall (Plates 26, fig. 42; 37, fig. 24), with expanded base (Plates 26, fig. 46; 38, fig. 8), expanded trianguloid base (Plates 26, fig. 47; 37, fig. 25; 38, fig. 17), T-or Y-shaped base (Plates 26, fig. 48; 37, fig. 13; 38, figs. 9, 10), and double-pointed (one only) (Plate 37, fig. 14); more than 3,000 end scrapers, oval or circular in form, and frequently serrated (Plates 26, figs. 29-35; 37, figs. 15-18, 29; 38, figs. 6, 7, 12-14); approximately 50 strike-a-lights(?) (Plates 26, fig. 53; 37, fig. 28; 38, figs. 5, 11, 16); 15 sinewstones, mainly with multiple deep or

[1]Ritchie, 1938a, pp. 80-84, 96.

Plate 42.

Burial 10, Castle Creek Site
Castle Creek Focus, Owasco Aspect

Closely flexed skeleton of child in wall recess of refuse pit. Note potsherds and refuse bone in pit bottom. Pottery jar before face, finger bones within rim.

Photograph by Foster Disinger, Binghamton, New York. Reproduced by courtesy of Mr. Disinger and the Broome County Historical Society.

Plate 43. Burial 6, Adult Female Skeleton in Seated Position
Castle Creek Site
Castle Creek Focus, Owasco Aspect

Photograph by Foster Disinger, Binghamton, New York. Reproduced by courtesy of Mr. Disinger and the Broome County Historical Society.

Plate 44. Multiple Bundle Burial
Castle Creek Site
Castle Creek Focus, Owasco Aspect

Represents three adult males and a child.

Photograph by Foster Disinger, Binghamton, New York. Reproduced by courtesy of Mr. Disinger and the Broome County Historical Society.

shallow grooves (Plates 37, fig. 23; 38, figs. 34, 35); a few pitted and battered pebble hammerstones (Plates 37, fig. 22; 38, fig. 36); 2 pendants with grooved top (Plate 38, figs. 31, 32); a single plano-convex adze (Plate 38, fig. 37); 3 rude rectanguloid celts (Plate 38, fig. 33); 5 flat, notched pebble "netsinkers," whose presence here, if they be netsinkers, is one of the mysteries of the site; one perfect obtuse angle elbow pipe (Plate 38, fig. 30) and portions of another (Plate 38, fig. 29); and approximately 300 small, grit-tempered, dentate-stamped potsherds of early Owasco type (Plate 38, figs. 1-4). Bone objects are limited to 2 rude splinter awls, and even bone refuse was very scarce, indicating the decay of this material in the humid soil.

The scarcity of pottery, absence of many domestic artifacts (pestles, etc.), abundance of drills, scrapers, points, and sinewstones, and especially the large quantity of workshop debris, suggest that in this secluded aerie lived an esoteric guild of specialized craftsmen who fabricated not only chipped stone implements, but complete hunting and war equipment. Availability of raw material could not have been a factor in selecting the site, for a minute search of the whole surrounding territory for a mile disclosed no possible source and, moreover, flint does not occur in the local native rock (Oneonta sandstone). The raw material found indicates a pebble industry (Plate 37, figs. 3-9) and such pebbles, or more accurately rolled masses of tabular chert, occurred in plentitude in a bank of glacial gravel near Oule-out Creek and in the bed of that stream, several miles away (Plate 37, figs. 1, 2). The terraces of the Delaware and Susquehanna also afford them and there can be no doubt that the ultimate source was the Onondaga limestone outcrops traversing the state farther north. Except for a few white quartzite points (Plate 38, fig. 20), possibly also made from glacial pebbles, all the chipped implements are of this gray chert, which must have been carried several miles to the hilltop. The motivation for this anomalous behavior remains an inscrutable mystery.

Enders Component (Plate 6, site 14)

This is typical of several camp or small village components of the early Owasco culture in the Schoharie Creek valley of eastern New York. It was partially explored by Mr. James A. Osterhout of Cobleskill, a member of Van Epps-Hartley Chapter, New York State Archeological Association, to whom the writer owes many thanks for the privilege of examining the site and collection therefrom, as well as for the following information.

Located in Schoharie County, about a quarter mile north of the junction of Cobleskill and Schoharie creeks, on the west bank of the latter, and some 150 feet from the water's edge, on a fairly level cultivated field, is a spread of very shallow refuse of unknown extent, 1,296 square feet of which had been systematically excavated by Mr. Osterhout by the fall of 1940.

Plate 45. Multiple Dog Burial, Small Breed
Castle Creek Site
Castle Creek Focus, Owasco Aspect

Photograph by Foster Disinger, Binghamton, New York. Reproduced by courtesy of Mr. Disinger and the Broome County Historical Society.

The chief features are 5 pits, 18 to 36 inches in diameter and 9 to 41 inches in depth and 2 clusters of fire-broken stones and ashes, approximately 2 1/2 feet across, in shallow subsoil pockets. From the customary pit fill of ash, charcoal, and black earth, carrying food and industrial refuse, came an assortment of artifacts which link this station closely to the not very distant components 11-13 (Plate 6), described above.

All projectile points are of the broad, incurved base, triangular order. Oval and round end scrapers, for the most part serrated, are frequent, and one stemmed example with rounded end, and an unusual rectanguloid celt-shaped scraper, finely chipped all over, came to light. The numerous perforators conform to 4 types, viz., based on rough spall, expanded rectanguloid base, expanded ovoid base, and triangular with concave base. Six strike-a-lights (?) have thus far been unearthed.

Of rough stone there are sinewstones with multiple shallow or deep grooves; spherical unpitted hammerstones, one of flint; sandstone pebbles with numerous drilled conical pits (like fig. 11 of Plate 46, from Bainbridge); anvilstones; shallow mortars; flat, notched net-sinkers; a flat, oval, pebble pendant; a carefully worked phallic effigy of indurated clay, resembling, except in material, those from Jack's Reef; and a hematite paintstone.

Fragments of 2 pendants or gorgets (lack of preserved perforations precludes specific identification) and 3 curved U-shaped objects, evidently made from a steatite pipe bowl, and perhaps used as gaming pieces, comprise the polished stone articles, while of bone there is little more than an ovoid plaque, like that illustrated on Plate 29, fig. 25.

Potsherds are relatively numerous, but small, and establish no departure from existing criteria for this culture. They exhibit the familiar cord-roughened body treatment on medium coarse to medium fine grit-tempered vessels with conoidal base, constricted neck, and straight to everted rim. Cord-wound stick or dentate-stamp decoration, consisting of lines and herringbones (one example of the latter is incised), prevails.

Two pipe bowls complete the congeries. One, of obtuse angle elbow form, has incised triangular ornamentation; the other, a fragment only, exhibits mammiliform bosses and strikingly resembles the Hilltop Workshop pipe, pictured on Plate 38, fig. 30.

No burials have yet been found at Enders.

Turnbull Component (Plate 6, site 15)[1]

On the south side of the Mohawk River, a short distance above the village of Rotterdam Junction, Schenectady County, is the Turnbull site, intermittently excavated from 1932 to 1935 by members of the Van Epps-Hartley Chapter, New York State Archeological Association, of Schenectady, under the general direction of Mr. Vincent J. Schaefer, who had discovered the

[1]Condensed from an unpublished manuscript entitled, "The Turnbull Site, of the Owasco Aspect in Eastern New York," generously provided the writer by its author, Mr. P. Schuyler Miller, Schenectady, New York.

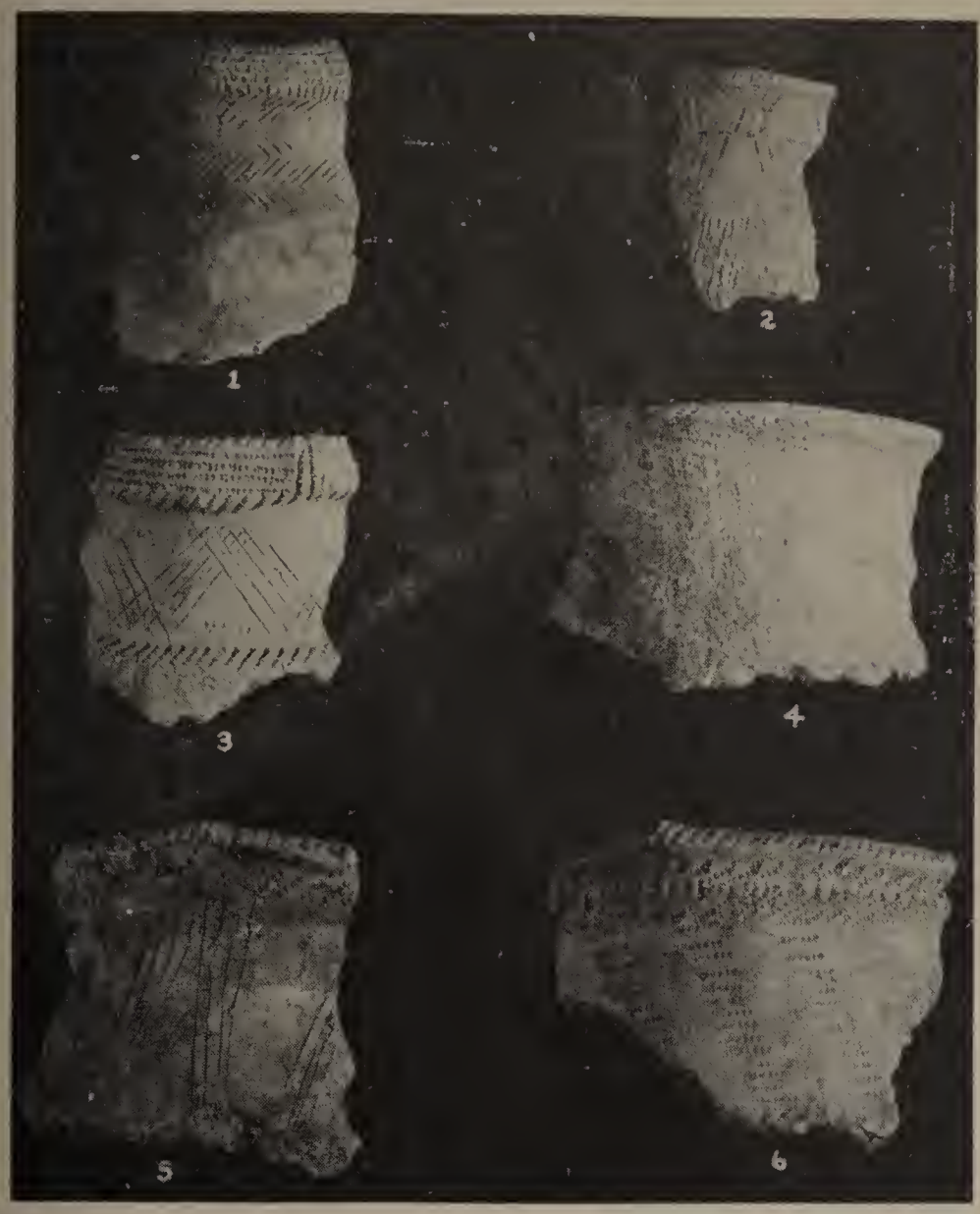

Plate 46. Rim Potsherds and Stone Artifacts
Bainbridge Site
Castle Creek Focus, Owasco Aspect

1, collared sherd, herringbone pattern in pointillé work; 2, chevron-like design executed with toothed stamp; 3, collared sherd with node, dentate impressions on collar and shoulder, incised chevrons on neck; 4, all-over pattern of dentate impressions on neck and rim; 5, incised chevron on neck, dentate lines on rim; 6, castellated rim, dentate-stamp work in plat design on neck; 7, circular shale pendant, with radially incised ornamentation; 8, side-notched point; 9, cylindrical pestle; 10, trianguloid celt; 11, multiple-pitted stone.

Collection of Jasper Partridge, Bainbridge, New York.

plow-exposed vestiges some years before. Stained soil covered approximately 150 by 50 feet of a low ridge bordering the river, which prior to Barge Canal construction here flowed over a series of shallow rifts, forming, with adjacent pools, ideal fishing grounds. A further feature of attraction probably lay in the protective gravel terrace behind the site, from the base of which a strong spring still issues.

Over 2,000 square feet of the occupied area, which has been gradually reduced by river bank erosion, were explored by trenching, revealing a refuse mantle 10 to 15 inches in thickness, 31 pits, numerous hearths, and 2 burials. The first burial comprised the much-crushed skeleton of an old man, interred in the flexed position on the right side, facing south, 18 inches below the surface of a shallow refuse pit, and unaccompanied by grave goods. No data are available on the second for it was found by an itinerant collector. Since its position was also near the river, it is conjectured that other graves may have been destroyed by the encroaching stream.

The pits, ranging in diameter from 2 to 5 feet, with the majority 3 or 4 feet across the mouth, and in depth from 1 to 4 feet, with 2 or 3 feet the rule, possessed the customary dark earth filling, with interspersed bone and industrial refuse, and a normal concomitant of intact and fragmentary artifacts. Hearths were also present therein, as well as in shallow depressions at the base of the refuse mantle, and it was observed that artifacts occurred with greater frequency in the vicinity of these ash-filled basins.

The trait table for the site lists 509 objects of chipped stone, against only 21 of polished and 100 of rough stone, a ratio quite harmonious with the general picture of the Owasco culture. There were, however, only 46 implements of bone and antler and but 2 clay pipe fragments, a low frequency as contrasted with other Owasco components. Potsherds occurred in the usual abundance, and furnished an unassailable basis for assignment of the site to the earlier or Canandaigua Focus of the aspect.

The principal artifact types comprise the following: 168 prevailingly broad, equilateral triangular points, mainly with concave or V-shaped base;[1] 59 triangular points with convex edges, thought to be knives; 54 drills of sundry styles (based on rough spall, with expanded base, expanded side-notched base, T- and Y-shaped bases); 140 end scrapers (circular, oval trianguloid); 20 side scrapers from flakes with retouched long edge; 25 strike-a-lights (?) (see Plate 26, figs. 52-55); 6 celt-like scrapers (?) of chipped chert; 5 trianguloid celts (only 1 intact); 3 broken plano-convex adzes; 3 trianguloid pendants (1 intact) of striped slate and sandstone; a flat oval sandstone and a flat circular slate pebble drilled for suspension near one end and the center, respectively; 6 stone pipe sherds, at least one identifiable as a flat-base platform type;[2] 18 anvilstones; 6 unpitted and 24 bipitted hammerstones; 3 multiple pitted stones; 2 cylindrical pestles; 2 flat milling stones and a mortar with broad deep pit (evidently a diagnostic Owasco type, see Plate 27, fig. 11); 8 sinewstones, all but one of the

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[1]The only departure is a narrow stemmed point very like fig. 1, Plate 26, from the Canandaigua station.

[2]Unique, in the writer's knowledge, from an Owasco congeries.

Plate 47. Pits on Bainbridge Site
Castle Creek Focus, Owasco Aspect

Pit 18 sectioned to show A, sand topsoil; B, dark stained sand and refuse; C, shell layer; D, black basal fill. Cleared tops of shell pits 20 and 21 also shown.

multiple deeply grooved kind; 29 notched netsinkers; a hematite and a graphite paintstone; 12 polished splinter awls; 2 deer ulna awls; a rib awl; 4 thin, curved, perforated needles; a spatulate bone tool; 4 flat, triangular, bone projectile points, with broad faces tapered to base;[1] 3 cylindrical antler flakers; 4 harpoons (?) with exceedingly weak multiple bilateral barbs; 8 whole or split beaver incisors with chisel-shaped incisal edges; and part of a turtle carapace receptacle.

The ceramic inventory consists of 2 pipe fragments of indefinable form and 117 grit-tempered potsherds, representing at least 69 different vessels. About half of these had straight rims; the remainder were everted. The neck shows only mild constriction and, where indicated, the base was pointed. Cord- or fabric-roughening characterizes the body, while most of the rims and necks are decorated, in over 80% of instances with dentate-stamp or cord-wound twig impressions in simple linear design. The punctate technique (round, oval, rectangular) has been employed in embellishing 6 vessels, and 13 bear broad linear trailing or impressing. Weak appliqued collars appear on 3 rims from different vessels, but cas - tellations and nodes are absent.

In total pottery traits, the relative scarcity of pipes and bone work, and abundance of scrapers, drills, and sinewstones, the Turnbull site manifests its closest affinities with the Norwich, Wilbur Lake, Hilltop Workshop, and Enders sites, all in eastern New York (Plate 6, sites 11-14).

Buried Village to Frenchman's Creek Components (Plate 6, sites 16-20)

For the most part small Owasco camp sites, these have been investigated by the Van Epps-Hartley Chapter, New York State Archeological Association, which plans to publish on one or more. Material shown to the writer clearly pertains to the Canandaigua Focus.

Craniometric Data

Of the 14 crania of this focus, suitable for metrical study, 9 male and 2 female are from the Canandaigua site and 2 male and one female from the West Rush (Rapp) component. With a single exception both sexes are long-headed (mean cephalic index, male, 72.2, dolichocephalic, range 68.3 - 75.8, average deviation 1.7; female, 73.5, dolichocephalic, range 71.3 - 77.2, average deviation 2.4) and all but one has a medium to high vault (height -

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[1]Not previously recorded from the Owasco Aspect.

length index, male, 75.2, hypsicephalic, range 68.9 - 81.5, average deviation 3.1; female, 73.0, orthocephalic, range 72.9 - 73.2, average deviation 0.1). In a large majority the faces are of medium length (total facial index, male,[1] 87.7, mesoprosopic, upper face 53.2, range total face 83.3 - 92.0, average deviation 2.1; female, 85.8, mesoprosopic, upper face 53.8, range total face 84.6 - 87.0, average deviation 1.2). Orbits of moderate height characterize the males[2] (mean orbital index 82.7, mesoconch, range 71.1 - 91.0, average deviation 3.9), those of the females[3] being on the whole a little higher (86.6, hypsiconch, range 77.3 - 93.5, average deviation 6.2). A medium to broad nasal aperture is an almost constant feature in both sexes (mean nasal index, male,[4] 51.4, platyrrhine, range 45.6 - 60.7, average deviation 4.5; female,[5] 53.2, platyrrhine, range 45.7 - 59.5, average deviation 5.1).

The Canandaigua and Castle Creek crania comprise essentially a uniform series, the latter exhibiting a slightly higher mean cephalic index (72.8 and 76.0, respectively). Remarkable harmony exists also between the Owasco group as a whole and the prehistoric Iroquois, as shown in the following table.

	Owasco Aspect (both foci)		Iroquois Aspect[1]	
Index (mean)	♂	♀	♂	♀
cephalic	73.6	75.2	72.8	74.0
height-length	76.6	73.2	73.1	75.5
facial (upper)	51.7	54.4	53.0	52.6
orbital	82.2	84.7	82.6	86.1
nasal	52.0	55.4	50.9	53.8

[1]Indices derived from 46 male and 34 female skulls of the prehistoric period (several foci and components).

[1]7 examples.
[2]6 examples.
[3]3 examples.
[4]8 examples.
[5]3 examples.

Coastal Aspect, ? Phase, Woodland Pattern

While perhaps relatively and absolutely more material pertaining to this cultural entity is above ground through excavation than is the case for any other New York occupation, the configuration of the Coastal Aspect is the least definite of all. Several factors contribute to this paradoxical situation, the most salient being the lack of published accounts relating to the large number of excavations conducted in recent years. The somewhat uncritical character of certain of the early reports, coupled with the difficulty of now locating for restudy much of the material referred to, has also retarded analysis. Finally, many of the partially dug sites are no longer available for examination, having been long since destroyed by urban encroachment. A more ample description of the aspect than that here given awaits the systematic study of collections already made and the systematic excavation of additional stations in the area believed to represent the minimum and later range of the culture, viz., the Hudson Valley below Albany, Long Island, lower Connecticut, and northern New Jersey, as well as over its presumably peripheral and earlier extent, comprising, probably, the littoral region from Chesapeake Bay into Rhode Island[1] or beyond. Inland the limits are still more indefinite. The Schermerhorn site, situated in the lower Mohawk Valley, and to be described below, presumably pertains to the "Early" Coastal Aspect. Possibly also of this age is the intrusive level at the Lamoka Lake station (page 303).

Typological and some stratigraphic evidence from rock shelters,[2] shell heaps,[3] and village sites,[4] may be marshalled in support of two postulated foci, and it seems very likely that further subdivision will attend future research on this aspect.

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[1]Brown, 1939.

[2]Harrington, 1909a, pp. 125-130.

[3]Skinner, 1915, p. 57; 1919, pp. 52-74; 1920, pp. 129-136; Harrington, 1924, p. 245; Brown, 1939, pp. 23-26.

[4]Mercer, 1897, pp. 70-85. Dr. Mary Butler of the University of Pennsylvania Museum, who conducted a two years' archaeological survey of the lower Hudson Valley for Vassar College, found fairly definite evidence of two superimposed cultures within the Coastal Aspect. The younger, of which the type site was the upper level at Cruger's Island (below Peekskill), seemed best represented north of northern Dutchess County. It was associated on some components with mussel shell refuse and was characterized by Iroquoian as well as Woodland pottery; a large quantity of triangular points, principally of chert; and a bone industry.

The underlying level, present also on the Cruger's Island site, but best revealed in Westchester County, was frequently associated with oyster shell refuse. Material was generally scarcer on the sites, and usually occurred "at the bottom of the brown or old humus layer, just where it begins to mix with the underlying yellow sand. In both New Jersey and the Hudson Valley the concentration of material was here." The ceramics consisted entirely of Woodland pottery; there was a relatively large quantity of red slate and gray quartzite chipped stone artifacts, mainly identified as knives and scrapers; argillite also occurred; the

Plate 48. Restored Pottery Vessels
From Various Long Island and Southern Connecticut Sites
1-5, "Late" Focus; 6-8, "Early" Focus, Coastal Aspect

1, Three Mile Harbor, Long Island; 2, Southold, Long Island; 3, Niantic, Connecticut; 4, Gilford, Connecticut; 5, Three Mile Harbor, Long Island; 6, 7, Aquebogue, Long Island; 8, Southold, Long Island.

1, 2, 5, 8, collection of N. E. Booth, Southold, Long Island; 3, 4, collection of Edward H. Rogers, Devon, Connecticut (photographs by Mr. Rogers); 6, 7, collection of Charles F. Goddard, Mattituck, Long Island.

Fig. 3 is 10 3/4 inches in height; 4, is 15 inches high; 7, is approximately 15 inches high; others in proportion to 15.

The "Late"[1] produces grooved axes, bannerstones, and gorgets much more infrequently than the "Early"[2] Focus; as well as a preponderance of broad triangular arrowpoints of Owasco type; more numerous and better made celts; obtuse angle elbow pipes of finer workmanship; a considerable amount of bone and antler work of fair quality, including fishhooks and harpoons; and vessels with grit or shell aplastic, fabricated of better quality paste, with globular body, round base, constricted neck, everted rim, often with points, and more delicate and artistic decoration, both impressed and incised, than is exhibited by the earlier ware (Plate 48, figs. 1-5), which, however, with technological improvements in paste and ornamentation, survived well into later times.[3]

In these modifications one theoretically detects the inspiration of alien peoples to the west; at first the late Owasco folk who, as already stated, had probably been energized by Iroquois influence, and finally by the Iroquois directly, whose acculturating sway is best depicted in the collared and castellated pots with chevron or triangle decorative motif (Plate 48, figs. 1-3), which appear sometime in the "Late" Focus and increase in frequency in protohistoric and historic times.

Thus is indicated the temporal relationship of the later epoch to the Owasco and Iroquois aspects. The chronological position of the "Early" Focus is more doubtful; the intrinsic presence of the bannerstone and the numerous resemblances in chipped stone equipment (compare Plates 50, 51 with 111, 112, 125, 126), plus the occasional occurrence of the plummet, gouge and ulo, strongly suggest a survival of Laurentian traditions.

The aggregate of the testimony affords the following list of characteristics of the "Early" Focus; the grooved axe; celt; sinewstone; cylindrical pestle; unpitted and pitted hammerstone; anvilstone; notched, grooved or perforated bannerstone; gorget; projectile points and knives of several forms, viz., lozenge- or semilozenge-shaped, stemmed, corner- or side-notched and triangular, sometimes pentagonal; drills and scrapers of several kinds, chiefly the simple oval end form of the latter; pottery and stone pipes of tubular and obtuse angle elbow type; and crudely fashioned, conical, U-shaped or lemon-shaped vessels, grit- or more rarely shell-tempered, fabric-impressed, dentate stamp-marked or occasionally incised. Little bone and shell work has been found; a few rude splinter or whole bone awls, flat needles,

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bannerstone and ground slate semilunar knife were present; and the grooved axe and a dubious plummet came from one site.

Referring primarily to the older level of Hudson Valley sites, Dr. Butler was impressed by the prevalence of Woodland pottery; the presence of steatite vessel fragments; scarcity of pipes; great variety of point types at each site, but constant from site to site; and occurrence of the ground slate semilunar knife, chipped side scraper, and chopper. (By correspondence of November 27, 1940)

[1]This might be designated the Clason's Point Focus from Skinner's early work on this Manhattan Island site (Skinner, 1919, pp. 75-124).

[2]Similarly, Throg's Neck Focus might be a pertinent substitute for the term "Early" (Skinner, 1919, pp. 51-74).

[3]Skinner, 1919, pp. 75-124.

Plate 49.

Pottery Vessels
Vicinity of Saratoga Lake, Saratoga County, New York
Probably "Early" Focus, Coastal Aspect
Height of complete pot 14 inches

Of grit-tempered terra-cotta ware; "lemon-shaped"; with weak rim points; rocker-stamp, herringbone, and zone ornamentation executed with toothed stamp.

Collection of Van Epps-Hartley Chapter, New York State Archeological Association, Schenectady, New York.

conical antler arrowpoints, antler flakers, and cups made from both the box turtle and conch shell virtually exhaust the list. Illustrations of basic pot types may be seen on Plates 48, figs. 6-8; 49, figs. 1, 2, while on Plates 50, 51 are pictured many of the stone elements. Burial was principally in the flexed position without grave goods.[1]

Components of the Coastal Aspect

Van Orden Component

This typical Hudson River village site lies near the tip of Green Point, a few miles south of the mouth of Catskill Creek, Greene County. It occupies a sloping terrace about eight feet above the river level at high tide and covers some 2,000 square feet, over half of which had been excavated by members of the Van Epps-Hartley Chapter, New York State Archeological Association by the spring of 1941.

According to Vincent J. Schaefer, President of the Chapter, to whom the writer is greatly indebted for this summary, "the chief feature of the site is a continuous stratum of crushed mussel shell occurring at a depth of from 8 to 11 inches below the surface and varying in thickness from 1 to 3 inches." Below the shell is "a dark brown to black mantle of occupied soil, ranging from 10 to 18 inches in depth, covering the thin yellow clay subsoil. A number of shallow pits, typical in their non-productiveness of similar components in the Mohawk and Schoharie valleys, and a few hearths constitute the other features of interest.

"Projectile points show a considerable range of form, although the broad concave base triangle is the most common. Broad stemmed, corner-notched, narrow side-notched with deeply incurved 'fish-tail' base and ovate points are also well represented, apparently both as arrow and javelin heads. Scrapers are not common, but drills of several forms and knives occur. The materials used for all of these include quartzite, crystal quartz, limestone, argillite, red slate, jasper, Onondaga chert, and greenish chert similar to that occurring at the not distant Coxsackie Quarries.[2]

"Rough stone implements include multiple grooved sinewstones, unpitted sandstone and quartzite hammerstones, rude anvilstones, and flat notched sinkers. A perforated sandstone gorget, several celts, and a polished elbow pipe fragment of chlorite, comprise the polished stone objects thus far found.

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[1]Skinner, 1919, pp. 51-74; 1909, pp. 3-61; 1909 a, pp. 113-121; 1909 b, pp. 213-235; 1915, 1919, 1920, 1921; Harrington, 1909, pp. 169-179; 1909 a, pp. 125-138; Schrabisch, 1909, pp. 141-165; Finch. 1909, pp. 65-73; Bolton, 1909. pp. 77-109; Parker, 1922, pp. 344-348; Ferguson, 1935; unpublished collections graciously placed before the writer for study by Messrs. Charles F. Goddard, Roy Latham, and N. E. Booth, of the Long Island Chapter, New York State Archeological Association.

[2]Parker, 1924.

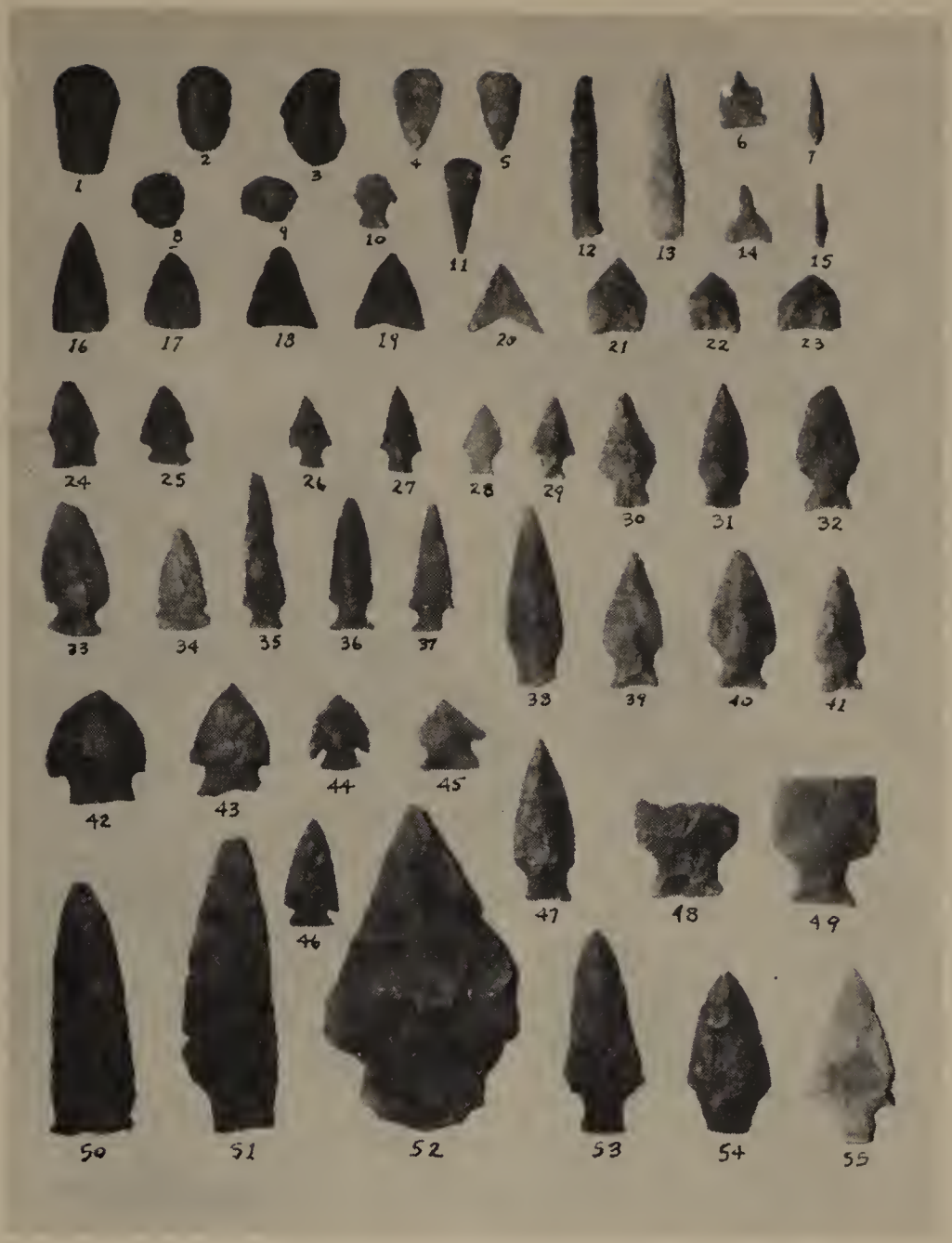

Plate 50.

Chipped Stone Implements
Schermerhorn Site, Schenectady County
"Early" Focus, Coastal Aspect
Fig. 52 is 5 3/16 inches in length

1, stemmed end scraper; 2, 3, oval end scrapers; 4, 5, 11, triangular end scrapers; 6, drill, with side-notched expanded base; 8, 9, round end scrapers; 10, side-notched end scraper; 12, 13, straight drills; 14, drill, with Y-shaped base; 7, 15, drills or gravers; 16, 17, straight base triangular points; 18-20, triangular points, with concave base; 21-23, triangular points, with angular edges (pentagonal-shaped); 24, 25, 33, 34, broad side-notched points; 26-31, narrow stemmed points; 32, 38-41, 47-48, semilozenge-shaped points; 35-37, narrow side-notched points; 42-46, corner-notched points; 50, side-notched knife; 51, assymetric knife; 52, broad stemmed knife or spear point; 53-55, broad stemmed points with sloping shoulders.

Collection of Van Epps-Hartley Chapter, New York State Archeological Association, Schenectady, New York.

"Bone is represented by only a few splinter awls and flat perforated needles. The relative fewness of bone tools suggests little use of this material, for the excellent condition of those found and the many animal and fish remains, prove that disintegration cannot have been a factor in their scarcity.

"The potsherds furnish the most interesting and valuable information. Very little pottery occurs in the top 4 inches of soil. From this level down to and into the upper portion of the shell layer, are found a considerable number of typical Mohawk Iroquois potsherds, characterized by the incised chevron design, notched collar and hard fine tempered ware. Fragments of at least 6 different vessels have been recovered, but to date no other Iroquois artifact, and not a sherd of this type has occurred below the shell layer, although a distinctly different type of potsherd is present with increasing frequency as the subsoil is approached. This is, in general, a coarse to medium fine tempered ware, with rather rude impressed decoration. A number of sherds have a diagonal notched on the rim and frequently just below occurs a single row of deep punctates which leave a protruding boss on the inner surface.

"An analysis of the occurrence of chipped stone types as a function of depth plainly indicates that although the Van Orden site presents unmistakable evidence of relatively long occupancy with definite stratification, the wide variety of forms, characteristic of the many surface sites along the western shore of the Hudson between Albany and Kingston, persist throughout the refuse.

"The presence of Iroquois pottery in the upper and middle strata suggest that the site was occupied until the arrival of white traders, but the only European materials - a few copper and China scraps, a small kaolin pipe bowl and some peculiarly wrought iron nails - cannot yet be proved contemporaneous with any of the aboriginal objects."

Schermerhorn Component[1]

This most instructive of the recently excavated sites classified in the "Early" Focus of the Coastal Aspect is situated in the lower Mohawk Valley, about two miles west of Schenectady, Schenectady County, on the Clarence Schermerhorn farm. It occupies a knoll sheltered from the prevailing west winds by a high plateau from the base of which a strong spring issues, and is separated from the river to the north by half a mile of fertile alluvial plain.

Since its discovery in 1931 by Mr. Vincent J. Schaefer, whose home now overlooks it, members of the Van Epps-Hartley Chapter, New York State Archeological Association, have carried on sporadic excavations, opening more than 100 trenches, 6 x 12 feet in size,

[1]From an unpublished report, "The Schermerhorn Site," kindly furnished the writer by Mr. John A. Angus of Scotia, New York. Grateful acknowledgement is also accorded Messrs. Angus, Schaefer, Miller, et al., for a visit to the site and permission to make the photographs reproduced as plates 50 and 51.

Plate 51.

Stone and Pottery Artifacts
Schermerhorn Site, Schenectady County
"Early" Focus, Coastal Aspect
Fig. 25 is 7 1/4 inches in length

1-5, 7, 8, 11-13, sherds of grit-tempered, dentate-stamped and incised pottery; 6, pipe bowl fragment ornamented with oval design; 9, 10, gorget fragments; 14, pebble hammerstone; 15-17, "spool-stones"; 18, 19, steatite potsherds (19, reworked); 20, 21, sinewstones; 22, bannerstone fragment; 23, 26, plano-convex adzes; 24, grooved axe; 25, stone tablet, edges chipped and ground.

Collection of Van Epps-Hartley Chapter, New York State Archeological Association, Schenectady, New York.

yet a large portion remains to be explored. Black refuse accumulations, common to most settlement sites, are absent here, the unplowed light-colored loamy topsoil, 8 to 10 inches deep, producing the bulk of the remains. Unfortunately, long use of the field as a source of commercial sod has without doubt removed a portion of the deposit. Pits, not often encountered, were 3 1/2 to 4 feet deep, lacked steep sides, being usually saucer-shaped, and contained much charcoal. Rarely did they yield more than a few potsherds, but implements occurred rather generally in their immediate vicinity. A single large pit, not yet (1941) completely cleared, covers at least 200 square feet and holds a great accumulation of charcoal and fire-broken rocks, but no artifacts have been taken from it.

Distributional studies have shown a negative correlation with type, and from the nature of the industrial objects a closed site may be postulated.

No bone of any kind, except in the calcined state, has been preserved and more than half of the approximately 1,000 articles unearthed are projectile points of the following types, arranged in descending order of frequency; narrow and broad stemmed (Plate 50, figs. 26-31, 53-55); broad triangular, many indistinguishable from the Owasco form (Plate 50, figs. 16-20); narrow and broad side-notched (Plate 50, figs. 24, 25, 33-37); broad corner-notched (Plate 50, figs. 43-46); semilozenge-shaped (Plate 50, figs. 30-32, 38-41, 47-49); and pentagonal-shaped (Plate 50, figs. 21-23). Some 30 large points of the same types, probably for spears or javelins, are present in the collection (Plate 50, figs. 48, 49, 52-55) and about twice that number of knives of sundry patterns (Plate 50, figs. 42, 50, 51). Drills of several sorts total about 15 (Plate 50, figs. 6, 7, 12-15) and scrapers are abundant numerically and typologically (Plate 50, figs. 1-5, 8-11). The diversity of material of the chipped stone artifacts parallels that of type. Gray and green chert from the large Coxsackie quarry about 25 miles south of Albany[1] was much utilized, and there are cherts, identifiable from structural peculiarities, derived from the Oriskany beds of eastern New York and Big and Little Nose mountains in the Mohawk Valley near Fonda, as well as various quartzites and slates from the folded Ordovician rocks of the Hudson River region, and argillite and jasper, probably from eastern Pennsylvania.

In the polished and rough stone categories are gorgets (Plate 51, figs. 9, 10); pennate bannerstones (Plate 51, fig. 22); plano-convex adzes (Plate 51, figs. 23, 26); a single grooved axe (Plate 51, fig. 24); 2 large, thin, rectangular, banded slate objects with chipped edges and smooth faces, found together en cache (Plate 51, fig. 25); 2 fragments of a steatite platform pipe; steatite potsherds (Plate 51, figs. 18, 19); sinewstones of single- and multiple-grooved types (Plate 51, figs. 20, 21); hammerstones with and without pits (Plate 51, fig. 14); anvilstones; mullers; cylindrical pestles; shallow mortars; notched netsinkers; and so-called "spoolstones" (Plate 51, figs. 15-17).

The pottery is not remarkable for quality, being rather coarsely grit- tempered and friable. It appears to pertain to elongate vessels with conoidal base, straight-sided or nearly so, quite similar in paste and decoration to the pots from Saratoga Lake depicted on Plate 49. The ornamentation occurs above a cord-malleated body on both sides of the rim, lip, and shoulder and consists of rather neatly executed lineal dentate impressions and some

[1] Parker, 1924.

Plate 52.

Stone, Pottery and Shell Artifacts
Upper level, Lamoka Lake Site
"Early" Focus, Coastal Aspect (?)

1, Olivella shell beads (burial AP131); 2, Marginella shell beads (burial AP51); 3, cylindrical conch columella beads (burial AP51); 4, bannerstone fragment; 5, gorget fragment; 6, 7, 9, broad corner-notched points; 8, notched end scraper; 10, stemmed point; 11, semi-lozenge-shaped point; 12, 13, broad side-notched points or knives; 14, grooved axe; 15, sinew-stone; 16-20, cache blades (burial AP51); 21-27, potsherds, of coarse grit-tempered ware, from straight-sided vessels, fabric- or cord-malleated, some embellished with dentate-stamp (21, 22) or punctate impressions (27).

Material: All chipped objects of gray chert, except 10, which is of yellow jasper; 4, slate; 5, sandstone; 14, gabbro; 15, sandstone.

rocker-stamp work (Plate 51, figs. 1-5, 7, 8, 11-13). A pipe bowl segment, pictured as fig. 6 of the same plate, bears a design of radiating linear impressions.

Thus far absent are gouges, plummets, celts, native copper, birdstones, pendants, bolas-stones, ulos, and ground slate points, all important traits of one or another of the Laurentian, Vine Valley, and Owasco aspects. Until our concepts shall have been altered by augmented evidence, the Schermerhorn site may be regarded as an early Coastal component of much importance.

Craniometric Data

The writer had access to but 5 skulls (all male) of the Coastal Aspect, 4 from Aqueboque, Long Island, the fifth from Fresh Meadow, Three Mile Harbor, East Hampton, Long Island, excavated by Mr Charles F Goddard from typical "shell pit" sites. Without exception they are long and narrow (mean cephalic index, 72.6, dolichocephalic, range 68.2 - 75.5, average deviation 2.3), prevailingly of medium height (mean height-length index 72.1, orthocephalic, range 69.3 - 77.2, average deviation 2.3), with a broad low face (mean upper facial index 47.9,[1] chamaeprosopic, range 47.3 - 48.5), orbits of varying size from low to high (mean orbital index 79.9,[2] mesoconch, range 75.5 - 85.2, average deviation 3.1), and a nasal aperture ranging from narrow to broad (mean nasal index 47.1,[3] mesorrhine, range 38.9 - 56.6, average deviation 4.6).

Vine Valley Aspect; ? Phase, Woodland Pattern

To what may be termed an intermediate period, interposed between the relatively well defined late prehistoric and archaic periods in New York, pertain three occupations, evidently introduced from the Great Lakes area, perhaps directly through Ohio. Diversified in character but palpably interrelated, although in a complex manner, they have as a whole constituted a baffling enigma whose intricate nature is reflected in the uncertainties and contradictions of all workers in the northeast who have tried to cope with it. Taken together, these manifestations would appear, as already stated, to equate in a general way with Parker's "Mound-Builder Culture."[4] also, in an even broader sense, with Willoughby's "Old Algonquian Group,"[5] and with the unnamed phase of culture treated by Wintemberg in his paper on "Arti-

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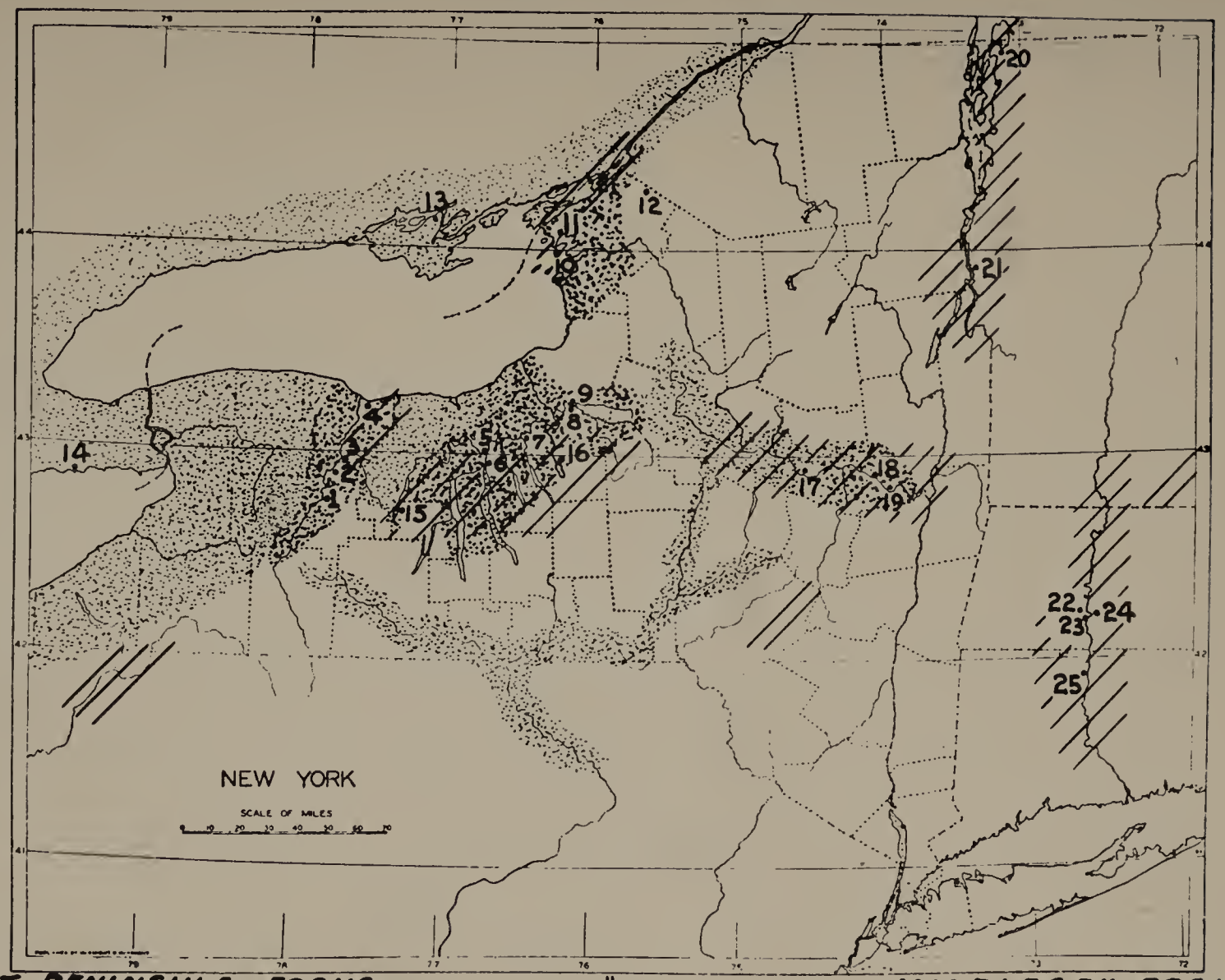
[1] 2 examples
[2] 4 examples
[3] 4 examples
[4] Parker, 1922, pp. 83-86.
[5] Willoughby, 1935, p. 81 ff.

MAJOR COMPONENTS AND DISTRIBUTION OF THE VINE VALLEY ASPECT



POINT PENINSULA FOCUS

1. Fall Brook, Livingston Co.
2. Avon (Durkee), " "
3. West Rush (Wray), Monroe Co.
4. Sea Breeze, " "
5. Kipp Island, Seneca Co.
6. René Menard Bridge, Cayuga Co.
7. Jack's Reef, Onondaga Co.
8. Pickins Site, " "
9. Oberlander Site #2, and Vinette Site, Oswego Co.
10. Point Peninsula, Jefferson Co.
11. Northrop Site, " "
12. Muskalonge Lake, " "
13. Bay of Quinté, Ontario, Canada
14. Port Maitland, " "

MIDDLESEX FOCUS

15. Vine Valley, Yates Co.
16. Near Amber, Onondaga Co.
17. Palatine Bridge, Montgomery Co.
18. Bradt Site, Near Hoffmans, Schenectady Co.
19. Toll-Clute Site, No. of Scotia, Schenectady Co.
20. Swanton, Vt.
21. Orwell, Vt.
22. One mile, No. W. of Holyoke, Mass.
23. Holyoke, Mass.
24. South Hadley Falls, Mass.
25. Windsor Locks, Conn.

Plate 53. Major Components and Distribution of the Vine Valley Aspect, ? Phase, Woodland Pattern

facts from Ancient Graves and Mounds in Ontario,"[1] in which he concludes: "Notwithstanding the fact that the artifacts from the different graves and mounds are sometimes not of the same kind, it is probable that they all belong to one phase of culture.

"Although the character of the decoration on a few pottery fragments, from some of the graves and mounds, suggests that the people who were buried in them were Algonkians, certain other artifacts of stone, copper and shell indicate that the people are more likely to have been related to the builders of the mounds; in other words, the artifacts and mounds represent a northeastern extension of the so-called mound-builder culture centering in Ohio. Parker also ascribes graves and mounds, containing artifacts like those described above, occurring in New York state, to a mound-building people."[2]

Mainly responsible for the perplexity is the fragmentary nature of the evidence, resulting from mutilation or destruction of nearly every component by collectors or commercial enterprises, and the fact that one must deal almost exclusively with a mortuary complex.

The assembling during recent years of a significant body of new information through excavation and the study of authentic material has emboldened the writer to expand the views of previous investigators and to create tentatively three cultural subdivisions, viz., the Point Peninsula and Middlesex foci, Vine Valley Aspect; and the New York Focus, Hopewellian Phase.

On stratigraphic grounds the first named focus has been allocated as shown in the chart of culture sequence on Plate 2. The basis is the discovery, already referred to, of a well-accoutered Point Peninsula burial beneath a thick intact midden of Owasco age, on the Jack's Reef station (pages 83 - 86); the occurrence near Brewerton of a deep detritus stratum of Point Peninsula provenience superimposed upon a physically distinctive zone, culturally referable to the archaic period (pages 160-166); and a thin deposit of evidently Point Peninsula material over a deep archaic midden and burials on Frontenac Island (pages 268-292).

Less cogent reasons exist at present for the postulated chronological positions of the Hopewellian and Middlesex foci (Plate 2), the explanation for the assignment being as follows: The Point Peninsula Focus, particularly its assumed later stage, exhibits undeniably strong affinities with the so-called "Intrusive Mound Culture," injected into certain Hopewellian mounds of Ohio and therefore considered post-Hopewellian. Moreover, in New York, Hopewellian features in the Point Peninsula appear in certain seemingly early or intermediate sites (e.g., Sea Breeze, pages 128-132). The trait elements mutually shared by the Point Peninsula and Middlesex foci (and therefore diagnostics of the Vine Valley Aspect as a whole) occur, in the main, in the supposed early stage of the former. In Ohio and elsewhere the Adena Phase is generally considered antecedent to full-blown Hopewellian, and the Middlesex Focus shares diagnostic features with the Adena. These postulates will be developed more fully as foci come under individual consideration.

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[1] Wintemberg, 1928, p. 175 ff.
[2] Ibid., p. 195

Before essaying this portion of the work, however, the markers or diagnostics of the Vine Valley Aspect must be enumerated. They comprise the following: the birdstone, bar amulet, gorget, pendant, copper bead of short thick and long thin types, marine shell bead of several sorts (short and long tubular and spheroidal, made from conch columella; and discoidal), thin trianguloid cache blade, steatite cooking pot, and hafted beaver incisor cutting tool.[1] Less deterministic are the bolas-stone, copper celt and awl, Marginella shell bead, bone dagger, barbed bone fishhook,[2] rude obtuse angle elbow pipe, conoidal base pottery vessel, graphite paintstone, use of a large quantity of powdered hematite in graves, stone-lined and/or -covered graves, and the practice of cremation.

Point Peninsula Focus

Named from the first recorded major component and situated on Point Peninsula, at the east end of Lake Ontario, Jefferson County (Plate 53, site 10, pages 166-173), this culture is traceable by sites and scattered surface evidence across western, central, and northern New York and lower Ontario, with a marked concentration in the Genesee, Seneca, and upper St. Lawrence valleys. Its vestiges are feeble along the Mohawk river and over all of eastern and southern New York, in which areas, except southern New York,[3] remains of the Middlesex occupation occur most abundantly (Plate 53), a fact which, coupled with the points of culture agreement, awaken speculations of partial coevality. Nevertheless, to date, they seem divorceable by valid distinctions.

Sixteen Point Peninsula components are plotted on the map of culture distribution (Plate 53),[4] and still others, quite surely of this horizon, whose data are too fragmentary for analytical purposes, are recorded in the writer's files. With two exceptions, Kipp Island and the Vinette site (components 5 and 9, Plate 53), they consist of single graves or cemeteries of varying size, mainly small, for most of which the potential evidence was greatly reduced by vandalism or inadequate recording. Of the two known habitation areas, the chief contribution afforded by Kipp Island is a partial insight into the nature of the ceramics, which are linked to the burials by the occurrence in graves and refuse alike of identical forms of harpoons, projectile points, antler handles for copper awls, etc. Curiously neither here nor

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[1]At least 7 of these have recently been found with burials in the Bennett site, Orwell, Vermont, a large station of the Middlesex Focus, but the only site of this horizon known to have produced them.

[2]One example occurred in the Bennett site, Orwell, Vermont.

[3]A considerable number of blocked-end tubes have lately been reported from surface sites in the Alleghany Valley of northwestern Pennsylvania by Mr. Edmund S. Carpenter, suggesting that if our chronology be correct the Middlesex may underlie the Point Peninsula in western New York.

[4]Numbers 6 and 9 each consist of two neighboring components.

elsewhere has a pottery vessel been included in the often rich mortuary panoply, although isolated potsherds were present in a few Kipp Island graves. The large test pits sunk on the Vinette station provided confirmation of its relationship to the cemetery on the nearby knoll (Oberlander site, No. 2); a small number of cultural forms not secured from the graves, of which by far the major element is pottery; and the important stratigraphic evidence, already referred to.

Each site, therefore, may be likened to the segment of a circle, the sum forming considerably less than a complete orb. While all segments overlap, few are closely congruent to the degree manifest in components of both later and earlier occupations, probably because of the exuberance of the culture and the relatively small sample of the total complex present on each station; hence comparative site analysis is extremely difficult. Nonetheless, careful appraisal of the trait table on pages 354-366, suggests a dual or tripartite division into components 1-6 or 7 (left to right) and 8-16. Number 7, the Sea Breeze site, with its more palpable Hopewellian analogies, seems, however, to stand apart from the others as a possible intermediate stage, which perhaps should be classified with the Hopewellian Phase in New York.

To consider only traits having evident diagnostic value, one finds gorgets (Plate 86, figs. 20-25), birdstones (Plate 86, figs. 30, 31), and tubular pottery pipes (Plate 54, fig. 52), exclusively in the first group (1-6),[1] and much more common to it, thin finely formed cache blades (Plates 70, figs. 1-30, 32-38; 71, figs. 1-4, 7-10), thin side-notched points (Plate 71, figs. 5, 6, 11, 12, 25), copper beads (Plates 54, fig. 51; 56, figs. 13, 14), roulette or rocker-stamped pottery (Plate 74, figs. 2, 10, 18), and the practice of cremation (Plate 73). Confined to the second group are pendants (Plate 86, figs. 26-29, 35), bar amulets (Plate 86, figs. 33, 34), combs (Plate 87, figs. 1-9), stone tubular pipes (Plate 86, fig. 32), and slightly bent elbow pipes of stone and clay (Plate 64, figs. 12-15), while appreciably more common here than in group one are thick rude cache blades (Plate 60, figs. 18-26), triangular projectile points (Plate 60, figs. 8-10, 14-16), platform pipes (Plate 69, figs. 1, 3, 4), large antler flaking tools (Plate 63, figs. 1-5), and barbed bone and antler points of sundry types (Plate 86, figs. 1-19). A maximum of 85 or 40.7% elements in common can be demonstrated for the two series, strongly suggesting separable foci. Yet, cognizant of the fragmentary character of the data, the writer feels the indiscretion of subdividing the complex at this time. He would, however, if the observed tendencies are corroborated by future research, emphasize the possibility of ultimate differentiation into at least two foci, of which sites 3 and 4 in the trait table (considered one complex) and site 12 constitute respectively the type components. The first, partaking more largely of Middlesex characteristics - birdstones, gorgets, copper beads, thin cache blades-, seems hypothetically the older; the second with pendants, combs, large antler flakers, and platform pipes is in closer accord with the Intrusive Mound Culture of Ohio, and appears more recent. And there may be an intermediate stage, exhibiting frank Hopewellian influence, as hinted by the Sea Breeze cemetery.

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[1]Gorgets were also present in the Sea Breeze site (number 7 on the trait table.)

For the Point Peninsula Focus as now postulated the salient markers are the hafted beaver incisor cutting tool (Plates 55, fig. 7; 65, fig. 12), present on virtually every bone-producing station; the platform pipe with straight (Plate 78, fig. 2) or curved base (Plate 76, fig. 48); birdstone with broad ridged base (Plate 71, fig. 29) or of narrow bar form (Plate 71, fig. 35); large antler comb (Plate 87, figs. 1-9); large flaking tool (Plates 54, fig. 12; 63, figs. 1-5; 65, fig. 6);[1] thin side-notched point (Plate 71, figs. 5, 6, 11, 12, 25); extremely thin trianguloid cache blade, evidently basic to the manufacture of several kinds of chipped stone tools, and often placed in large numbers as mortuary offerings (Plates 64, figs. 6-11; 70, figs. 1-30, 32-38); tubular pipe of clay (Plate 54, fig. 52) and stone (Plate 86, fig. 32); the almost universal occurrence with burials of unworked or partially modified bone and antler sections, probably also raw artifact material (Plates 54, figs. 35, 44, 45; 55, figs. 5, 6, 9, 10; 63, figs. 17-19); roulette or rocker-stamp pottery decoration (Plate 74, figs. 2, 10, 18); and the frequent use of liberal quantities of pulverized hematite or red ochre to cover the body of the deceased.

Our search for origins, or at least for a parallel complex, leads at once westward, where the most numerous affinities are to be found with the so-called Intrusive Mound culture in Ohio,[2] as the writer has previously pointed out.[3] Since 1937 additional discoveries in New York have augmented the similarity, resulting in the following list of shared elements: straight-base platform pipe; large comb; tool handle and large flaker of antler; hafted beaver incisor implement; large harpoon with prominent multiple unilateral barbs; conical antler arrowpoint; deer metapodial scraper; flat, eyed, bone needle; corner-notched and triangular projectile points, some with angular edges (pentagonal outline); stone pendant; granite celt of trianguloid form, oval in section; nephrite celt or adze; and inclusion of "raw" bone material among the grave furnishings.

Ohio traits absent from the New York congeries are the chipped and polished flint celt,[4] large hornstone scraper, and elk antler mallet.[5] Conversely, New York types, not reported from Ohio embrace the following objects: the gorget (two or more holes), birdstone, bar amulet, curved-base platform pipe, tubular and slightly bent elbow pipes of clay and

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[1]This tool was perhaps hafted as a mallet or hammer. According to Ellis (1940, p. 18), "The flakes removed with the antler hammer are narrow and long, and compared to those resulting from blows of the stone hammer, very flat." "This technique is most admirably suited to the shaping up of thin spalls and flakes because of the great accuracy that may be obtained after some practise and the relatively flat flaking which results." Just such narrow long, flat flake scars are to be seen on many flint artifacts of the Point Peninsula Focus.

[2]Mills, 1922, pp. 572-584.

[3]Ritchie, 1937a, pp. 188-192.

[4]Four celts and adzes of identical type are recorded by the writer from two surface sites near Clayton, Jefferson County, New York, and two others from sites near Phoenix, Oswego County. One of the former sites also produced a straight-base platform pipe.

[5]The double-pitted pick-like object and human face effigy mask, provisionally attributed to this culture by Mills, are also wanting. (See Mills, 1922, p. 572).

stone, cache blade, shark tooth pendant (Plate 69, figs. 6-12), bone dagger (Plate 77, fig. 14), antler club spike (?) (Plate 76, figs. 18, 19), serrated bone tube (Plate 63, figs. 11-13, 22, 23), antler arm band (Plate 63, figs. 6, 7), bone pin (Plate 61, figs. 4, 11, 12), biconvex antler gaming piece (?) (Plate 62, figs. 2-5), gorge (Plate 76, figs. 7-11), fishhook (Plate 62, figs. 11, 12), perforated animal teeth (Plate 65, figs. 4, 5), copper awl (Plate 62, fig. 6), sundry kinds of marine shell beads (Plates 66, 67), and paintstones (Plate 54, fig. 38), to enumerate the most significant. As no description is given by Mills of the vessel found at Mound City, pottery comparisons are precluded.

Some differences as well as resemblances exist too, with respect to the mortuary practices, for while single and multiple flexed burials occur in both places, the sitting and cremated New York burials cannot be duplicated in the Intrusive Mound culture, and the extended skeletons from Mound City have parallels only on the Menard Bridge, number 2 component. A degree of correspondence is shown in the selection of cemetery sites, a previously existing mound in Ohio[1] (and probably also at the Bay of Quinté, Ontario component) and a small, natural, mound-like knoll in New York.

Elsewhere in the Great Lakes area, assemblages of burial goods susceptible partially or wholly of inclusion with the aforegoing have come to light, notably at West Twin Lake, Montmorency County, Michigan, where Hinsdale, in 1928, uncovered below the base of a small mound, a flexed adult skeleton with the following objects, which like those from Ohio, have been examined by the writer: "Above, eight inches from the right shoulder, a pot which had been fractured by ground pressure was removed. The pot, after reconstruction, has the dimensions of four inches across the rim, six and a half inches through the bulge and seven inches in height. It appears to be of the type usually classified as 'Algonquin' [semiglobular, with somewhat pointed base, narrow constricted neck, slightly everted rim and cord- or fabric-impressed surface treatment]. It contained fifteen beautifully chipped chert arrows [thin, side-notched and triangular] and one small chert knife [triangular], an arrow point of hollowed-out antler tip which I sometimes designate as a 'thimble-point,' two two-holed slate gorgets; and two peculiar implements made by the insertion of beaver's teeth through perforations in a prong of deer's horn. There was close by, also, a black clay pipe with massive stem. The height of the pipe barrel from the base is two inches; the length of stem projecting beyond barrel, two and one-half inches [very similar to fig. 1, Plate 78, from Port Maitland]. Four bone harpoons with barbs upon one side and a hole through the base of each and a few slate objects that had been greatly damaged by fire were found near the right shoulder of the skeleton."[2]

Of the discoveries in Ontario reported by Wintemberg, a considerable number may be referred to the Point Peninsula culture, although the deficiencies of the primary sources make conclusions uncertain.[3] He records burials in red paint; cremation; short and long

[1]Mound City (Mills, 1922, p. 568 ff.); burials, tentatively of this culture, in the Heinisch and Hilltop mounds seem to have been primary or inclusive (ibid., pp. 565-568).

[2]Hinsdale, 1930, pp. 127-128.

[3]Wintemberg, 1928.

tubular native copper beads, as well as awls and axes of this material; birdstones; gorgets and pendants; platform pipes; marine shell beads and pendants of several kinds; and shaped abrading stones like those from Sea Breeze, New York (Plate 56, figs. 7, 16).[1]

In both northeastern and southeastern New York burials have been excavated which suggest the extension of the Point Peninsula culture beyond the limits shown on the map (Plate 53). A rock shelter at Fort Ticonderoga, at the head of Lake Champlain, produced "from a pocket in the refuse soil under a small opening in the shelter wall,"[2] about seven feet from a flexed and a disturbed burial, "a group of objects consisting of a hafted beaver-incisor engraver; nine deer antler tines, three of them worked; a bone awl [bear ulna]; a small antler flaking tool; a stone adze; a stone implement in process of manufacture; and many fragments of split and cut animal bone."[3] The refuse of the shelter yielded both Woodland and Iroquoian appearing potsherds, notched and triangular projectile points, end scrapers, drills, flat and conical antler arrowpoints, bone plaques, a harpoon, fishhook, and other objects, not all of which have been present on the larger Point Peninsula sites.[4]

The second reference is to a child burial exhumed from the famous "Burial Ridge" at Tottenville, Staten Island, by Pepper, in 1895. "At a depth of four feet, the remains were found, a block of white sandstone at the head and a similar slab of gray sandstone at the feet. Two feet away, to the north of the body, was another mass of sandstone. The skeleton lay on its back with the head to the east. Beads made of tiny Olivella shells [also Marginella shell beads][5] with rubbed perforations, and a few small disk beads were found about the neck, six flaked implements of clear-grained yellow jasper [rude thick cache blades] were packed about the base of the head. Five leaf-shaped objects of the same material [and type] were resting upon these pieces and almost covered the skull.

"Another [similar] piece was lying upon the right arm. The lower part of the face had evidently been covered with a copper ornament, for copper salts had discolored the upper and lower jaws, and even the cervical vertebrae were thoroughly impregnated and had become a dull green color. Under the jaw, a slab of mica was found. It was over four inches in length and had been worked. Near the right knee there was a cache of implements. In it were three stone arrow points [corner-notched, of chert] and twelve flakes of yellow jasper [some have edge retouched for knives or scrapers]; and pieces of deer bone [unworked raw material] with which to fashion new points had also been added.

"Six antler tips had been prepared. These needed but little cutting and drilling to make them into arrow points. Three sections of antler suitable for game sticks or for

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[1]Wintemberg, 1928, p. 11, fig. 12.

[2]Bailey, 1937, p. 8.

[3]Bailey, 1937, Ibid., 8. In view of subsequent finds on the Bennett site, Orwell, Vt., this material more likely has a Middlesex provenience.

[4]The writer takes this occasion to express his thanks to Mr. Bailey and the authorities of Fort Ticonderoga for the privilege of examining the shelter and specimens referred to.

[5]Identification from study of the specimens on exhibition in the American Museum of Natural History, New York

handles of knives or drills [large antler flaking tools, 2 seen] came next; then three beautifully chipped yellow jasper scrapers [triangular end scrapers, chipped on one side only], also two leaf-shaped pieces of jasper [thick cache blades]. A large stone pendant [rectangular] that had probably been worn for many years, was also in the deposit. The hole for suspension had been broken twice and a third hole had been drilled in it. A moccasin-shaped stone was there, perhaps a last [this may refer to the celt blank (?) noted by the writer] and with it was a flat stone on which the buckskin might be cut [probably the elongated pebble whetstone seen in the series]. The topmost piece was a large [chipped] crystal of smoky quartz. Beneath the mass was a large digging implement made from a shoulder blade of a deer [scapula scraper]. Beaver incisors [nine, unworked were counted, several in jaw sections], deer bones, and fragments of tortoise shell were also found; and lastly there was a paint receptacle [?] made from the lower jaw of a fox"[1] [unworked mandible of lynx ?].

The long bone splinter awl and the straight-base platform pipe of black steatite (?), exhibited with the above specimens, are not specifically mentioned in the account as being from this grave, although the museum catalog states that the pipe was found near the right parietal of the skull, and typologically it is a part of the mortuary assemblage.

The most remote occurrence known to the writer, strongly suggesting the culture under consideration, comes from two miles northwest of Linville, Rockingham County, Virginia, and was discovered by Fowke for the Smithsonian Institution, in a mound 65 feet x 75 feet x 3 feet, covered with broken human bones as the result of cultivation.[2] No other mound or trace of a village site was found in the vicinity and the excavations produced no industrial debris. Fowke estimated that no fewer than 800 individuals were represented. Single flexed inhumations were the exception, but many multiple bundle burials occurred, some constituting veritable "bone-beds," and there were also deposits of cremated bone "by themselves, or under the bundled skeleton of one or more individual, or in the middle of a stratum of bones a foot thick, showing no evidence of incineration."[3] The central area, "nearly circular in form, 36 feet in diameter, was filled from the top to fully two feet below the level of the original surface with skeletons and bone-beds in the utmost confusion."[4]

Grave goods were quite abundant and comprised the following types: Marginella shell bead, tubular conch columella bead, discoidal shell bead, whorl of the conch shell, rectangular mussel shell pendant, triangular chert arrowpoint, drill, knife, gorget, celt, celt-like scraper, quartz crystal, steatite platform pipe, eyed flat bone "net or weaving" needle, deer bone awl, rib awl, bone polisher, comb, panther cla (core), clay pipe, small pot containing food animal bones, and red and yellow ochre in considerable quantities.

Unfortunately Fowke affords no description of most of the articles, but the combs bear a striking resemblance in form, and more significantly in decoration to those of the Point Peninsula Focus (compare figs. 10, 11, with others on Plate 87). While it is true that

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[1]Skinner, 1909b, p. 14.

[2]Fowke, 1894, pp. 37-44.

[3]Ibid., p. 38.

[4]Ibid., p. 38.

otherwise the artifacts per se have a broader cultural distribution, when they are considered as a complex with the comb as a constituent, they suggest a cognate manifestation.

One might, therefore, suspect that what has been described as the Point Peninsula Focus of New York is related to a wider cultural horizon, perhaps an aspect or phase, in terms of the Midwestern Taxonomic Method of McKern,[1] distributed over a broad zone contiguous to the Great Lakes.[2] At Mound City, Ohio, it is demonstrably post-Hopewellian and it seems in part, to follow the latter in New York. Such traits as the use of the platform pipe (curved- as well as straight-base examples characterize it in New York); chalcedony flake knife, and broad corner-notched point of the same Flint Ridge, Ohio material; flat copper axe; large antler flaking tool; burial in mound; and the practice of extended and cremated forms of burial, are shared with the Hopewellian; but by far the greater number of its elements serve to distinguish it from the current picture of the latter, with which it seems to have shared an agricultural economy.[3] Whether the Point Peninsula and apparently related manifestations are to be considered degenerate stages of the Hopewell, following its decline for unknown causes; Woodland cultures inspired by contemporary or epigonal Hopewellian influence; or something else, remains for the future to determine.

Components of the Point Peninsula Focus

Save for a few preliminary accounts and a brief report on site number 10, (Plate 53), no description of a Point Peninsula component has ever been published. For this reason, and because the writer has devoted considerable time to collecting the scattered data, a rather full summary is given below. All culture traits are listed in the table on pages 354–366 and most of the artifacts are illustrated in Plates 54-87, many of which were made from photographs taken by the writer at the homes of various collectors. The map, Plate 53, shows the location of the stations described.

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[1]McKern, 1939, pp. 308-309.

[2]The Arvilla Focus, Red River Aspect, of Minnesota (Wilford, 1941, pp. 243-246) presents a number of suggestive Pt. Peninsula resemblances, chief of which are burial in the sitting position with frequent grave goods, rouletted pottery, elbow and straight pipes, bone pins and arm bands, harpoons with prominent "square" barbs (see Jenks, 1932, Plate 18), large antler flakers, hafted beaver incisors, tubular conch shell beads, and abundant red ochre.

[3]Slender though it be, the single carbonized corn cob fragment from the grave bottom on the West Rush (Wray) site (pp. 125-126) is more tangible evidence of horticulture than anything so far reported from a Hopewellian station (see Setzler, 1940, p. 262).

Plate 54. Mortuary Objects
From Fall Brook and West Rush (Wray) Sites
Point Peninsula Focus, Vine Valley Aspect

1-18, single burial, Fall Brook site; 19-52, burials, West Rush site.

1-3, sheet mica, part of grave lining; 4, large tubular beads, from conch columella; 5, fragmentary triangular point; 6, fragmentary point; 7, fragmentary thin side-notched point (5-7, have adhesions of decomposed iron pyrites and were probably strike-a-lights); 8, stem of pottery pipe; 9, portion of antler haft for beaver incisor; 10, 11, beaver incisors, whole, edge chisel-shaped; 12, large cylindrical antler flaker; 13, bone whistle, single round perforation; 14, heron beak, unworked; 15, incomplete bone bead, with incised decorations; 16, 17, fragments of thin, flat, perforated needles; 18, piece of worked antler; 19, triangular end scraper; 20, 21, narrow stemmed points, from grave fill; 22, drill with expanded base; 23, 29, strike-a-lights (?); 24-28, 33, 34, 37, 39-41, 43, thin side-notched points; 30, knife from retouched flake; 31, 42, broken thin points; 32, 36, thin side-notched points, with expanded base and beveled edges; 38, limonite paintstone; 40-42, points with serrated edges; 44, 35, 45, unworked antler and bone pieces; 46, flaker of long bone, edges chipped; 47, bone projectile point (?); 48, broad rectanguloid gorget; 49, beaver incisor hafted in antler; 50, unmodified mussel valve; 51, tubular copper beads of large diameter; 52, tubular pottery pipe.

Material: All chipped implements of mottled gray Onondaga chert; 48, sandstone.

Fall Brook Component (Plate 53, site 1)

Very little was salvaged of this probably important site located on the same gravel knoll described under component 2 of the Owasco Aspect, near the mouth of Fall Brook, Livingston County. Test pits in the layer of surface refuse near the burial locus produced a chalcedony flake knife, a rim fragment of a plain straight-sided pot heavily tempered with steatite, several drills and side-notched points.

Removal of gravel from the east side of the knoll in 1933 resulted in the destruction of some thirteen burials, according to Mr. George Barkley of Geneseo, who learned of the find in time to explore one grave, about three feet deep, containing very dark soil and the greatly decayed remains of a flexed adult accompanied by 52 stone objects, embracing side-notched projectile points; drills; cache blades of exotic chalcedony; an anvilstone; bolas-stone; pebble hammerstone; 3 oval sandstone abradingstones; tabular shale abradingstone with numerous incisions on both faces; a reworked triangular pendant of red slate, having incised line and triangle decorations; a small plano-convex adze; and 3 celts of quartzite and granite.[1]

No word of the circumstance reached the museum, but in February, 1937, when further molestation of the gravel disclosed a skeleton, the writer learned about the site and arrived in time to rescue a portion of the burial, that of an adult, probably flexed, reposing in a dark stained fossa 3 feet across and of equal depth. What remained of the grave pit was completely floored with sheets of biotite mica (Plate 54, figs. 1-3) and the abundance of pieces of this mineral in the talus along the gravel bank below the grave, where most of the artifacts were recovered, indicated that the entire bottom had been so covered. Surrounding the cervical vertebrae and skull sherds[2] were the large shell beads pictured as fig. 4 of Plate 54 where the other articles, mostly damaged by the diggers, are also portrayed.

Thoroughtest pitting through the courtesy of Mr. William P. Wadsworth of Geneseo, of the remaining portion of the knoll, prior to its complete removal in April 1937, revealed no further graves of this culture, but disclosed 21 Iroquois and Owasco burials, as already stated (page 75).

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[1] A closer inspection of the grave contents would probably have revealed bone objects as well.

[2] It is interesting to observe that the human bones from this and the previously found burial were much disintegrated, while the more recent remains from exactly the same kind of soil at the north end of the knoll were in a fair to good state of preservation.

Plate 55. Stone, Bone and Antler Implements
From Burial on Avon (Durkee) Site
Point Peninsula Focus, Vine Valley Aspect
Length of fig. 13 is 6 3/4 inches

1, small plano-convex adze; 2, multiple unilaterally barbed bone point or harpoon, base broken; 3, multiple bilaterally barbed bone point or harpoon, base broken; 4, rough splinter awl; 5, 6, 9, 10, 14, unworked or partially worked pieces of bone and antler; 7, beaver incisors hafted in section of antler beam; 8, beaver incisors, root portion broken off, edge chisel-shaped; 11, 12, large, cylindrical, antler flaking tools; 13, ornamented antler comb; 15, fragmentary deer scapula scraper.

Collection of Charles F. Wray, West Rush, New York.

Avon (Durkee) Component (Plate 53, site 2)

A single burial situated on a sandy slope adjacent to a gully carrying a brook into an old cut-off meander of the Genesee River, called Horseshoe Pond, about a mile north of Avon, Livingston County, was found by Mr. Charles F. Wray, in 1935.[1] The adult male skeleton, interred in a sitting position in an oval grave 50 inches long, 38 inches wide, and 35 inches deep, was covered with red hematite paint, which had been liberally sprinkled throughout the grave fill as well as over the body.

Close to the skull, which lay 18 inches from the surface and faced the northeast, was an antler comb (Plates 55, fig. 13; 87, fig. 2), while in the lap, where the hands rested, had been heaped the other objects to be seen on Plate 55, together with several sections of "raw" bone and antler not illustrated.

West Rush (Wray) Component (Plate 53, site 3)

In the spring of 1930, Mr. Charles F. Wray discovered a group of burials in a small sand rise at "Meadowwood," the estate of his father, situated on the high terrace bordering the east bank of the Genesee River, some 3 miles southwest of West Rush, Monroe County. Generously he invited the writer to assist in the excavation, which resulted in the exposure of 15 skeletons, flexed and bundled, the majority having burial goods, occupying 10 grave pits. The following is a condensation of the record.

Burial 1. Infant, flexed on right side, head east, bones much decomposed. Depth 12 inches.

Burial 2. Adult male, flexed on right side, head west, face south, remains very defective. Depth 12 inches. Two points (Plate 54, figs. 37, 40) over left clavicle.

Burial 3. Adult male, flexed on right side, head west, face south, much decayed. Depth 9 inches. Beaver incisor near arm, 3 points near skull (Plate 54, figs. 28, 41, 42); stemmed point (21, same plate) in grave fill, probably a fortuitous inclusion from an older surface occupation.

Burial 4. Infant, flexed, head west, poor condition. Depth 10 inches. Sprinkling of red paint over bones, especially skull.

Burial 5. Adult male, flexed, lying beneath flexed adult female with infant skeleton on either arm (same number). Depth 20 inches. Grave floor covered with dense black soil, suggesting bottom of cache pit. Native copper beads (Plate 54, fig. 51) around neck area of female.

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[1] Further intensive test pitting with Mr. Wray, who has generously placed his notes and specimens in the custody of the museum, failed to uncover other traces of the culture.

Burial 6. Adult female (?), flexed on right side, head south, face east, much decayed. Depth 24 inches. Skull reposed upon disturbed remains of previous burial, other fragments of which occurred in the grave fill. Point (Plate 54, fig. 39) lay over right scapula.

Burial 7. Child, flexed on left side, head northeast, face southeast, poor condition. Depth 16 inches.

Burial 8. Adult male (?), flexed right side, head west, face south, very defective condition. In oval grave 37 inches deep, floored with 3 inches of very black soil. Pocket in grave wall near knees produced 8 whole and broken points (Plate 54, figs. 24-27, 32-34, 36), a tubular pottery pipe (Plate 54, fig. 52), and several beaver incisors. In a second offering near the hands (folded before face) were a drill (Plate 54, fig. 22), flake knife (Plate 54, fig. 30), 2 strike-a-lights (?) (Plate 54, figs. 23, 29), a limonite paintstone (Plate 54, fig. 38), bone flaker (Plate 54, fig. 46), and several pieces of unworked bone (Plate 54, figs. 35, 45). Near the grave wall occurred a gorget (Plate 54, fig. 48) and an unworked antler tine (Plate 54, fig. 44).

Burial 9. Bundle burial of adult male, depth 12 inches, overlying flexed skeleton of adult female (same number), head west, face south, depth to grave bottom 24 inches. Condition fair. Beneath skull of male occurred a hafted beaver incisor (Plate 54, fig. 49), a bone projectile (?) point (Plate 54, fig. 47), 2 unmodified clam shells (Plate 54, fig. 50), and several pieces of "raw" bone. A stemmed point (Plate 54, fig. 20), probably of an older culture, came from the fill.

Burial 10. Adult male (?), flexed on right side, head west, face south, much disintegrated. Occupied abandoned cache pit 26 inches deep. Black soil, in which charred section of corn cob was found, covered bottom and skeleton to depth of 9 inches. Two thin broken blades (Plate 54, fig. 31) lay near thorax.

Tests made in the surrounding fields in search of a habitation area produced largely negative results, although several pits, containing a few fabric-marked potsherds and chert chips, were found. The many objects picked from the surface of this field indicate occupation at several periods. Evidently attributable to the Point Peninsula are about 20 projectile points like those from the burials, a bolas-stone, and perhaps 4 sinewstones.

Plate 56.

Mortuary Offerings
From Burials on Sea Breeze Site
Point Peninsula Focus, Vine Valley Aspect

1-4, 11, 12, thick ovate and trianguloid cache blades; 5, 6, 15, thin, elongate, polished slate objects of unknown use; 7, 16, narrow, shaped, sandstone whetstones, with chisel-like or bluntly pointed end, possibly for slotting antler hafts for reception of beaver incisor; 8, 9, flat pebble whetstones; 10, thick mica section; 13, barrel-shaped copper beads, strung on two-strand twisted cord; 14, short, tubular, sheet copper beads; 17, anterior segment of unworked woodchuck mandible; 18, 24, 34, 42, narrow rectanguloid gorgets; 19, 20, 25, flake knives; 21, 22, 28-31, thick side-notched points; 23, stemmed point; 26, 27, thin side-notched points; 32, unworked bear canine; 33, anterior portion of upper maxilla of beaver; 35, 36, corner-notched points; 37, conical antler point, with triangular tang; 38, copper awl; 39, antler awl handle, with base of copper awl in place; 40, conical antler projectile point; 41, beaver incisor in antler haft and 4 partially decomposed beaver incisors, in block of sand (solidified in situ to prevent disintegration); 43, deer metapodial beaming tool; 44, unworked deer antler tine.

Material: 1-4, 11, 12, 21-23, 28-31, gray Onondaga chert; 8, 9, sandstone; 18, fireclay; 19, 20, 25-27, 35, 36, varicolored chalcedony; 24, 34, 42, slate.

Sea Breeze Component (Plate 53, site 4)[1]

Close to the apparent former location of two small mounds,[2] on the summit of the lofty sand terrace sloping north to Lake Ontario and east to Irondequoit Bay, at Sea Breeze Park, Monroe County, the accidental discovery of three skeletons in the spring of 1939 led to the results outlined below.

Through the courtesy of Mr. George Long of Rochester, owner of Sea Breeze Park, seven additional burials - flexed, bundled and cremated - were removed by museum excavations, all but one accompanied by mortuary objects, of which a representative selection may be seen on Plate 56.

Burial 1, partially dug out by park workers, consisted of the closely flexed skeleton of an adult male with massive mandible, and an adult female, lying side by side at a depth of 15 inches. The bones were very much decayed and few could be saved. Under the male pelvis were found 3 rudely made stemmed and side-notched arrowpoints (Plate 56, figs. 23, 31) and a portion of another, all made of local gray chert. Coiled about the leg bones of both was a remarkable string of 85 native copper beads of several types, many still in place upon the two-strand twisted cord, preserved by copper carbonate (Plate 56, figs. 13, 14). A rude cache blade, shoveled out by the workmen, was found on the spoil heap.

Burial 2, also of a large adult male, much decayed, had been partly washed out by heavy rain, and the remainder dug by Mr. Lloyd Wilcox, brother of the park foreman, who said it had been flexed and that two gorgets were present on either side of the skull. Two of these are of drab gray slate (Plate 56, figs. 24, 42), one is of striped slate (Plate 56, fig. 34), while the fourth (Plate 56, fig. 18) is of gray fireclay, probably from southern Ohio. Two rude, chert, side-notched points (Plate 56, fig. 29) accompanied the skeleton.

Burial 3 was a multiple bundle burial of three individuals, apparently a man, woman, and child, whose skulls had been placed upon a heap of body bones, as shown in Plate 57, arrow 1. Fifteen rude gray chert cache blades lay grouped about (see Plate 57, arrow 2, and Plate 56, figs. 1-4, 11, 12).

Burial 4, two feet to the west of the above, was a loosely flexed adult female, on the left side, facing southwest, the hands folded on the breast (Plate 57). Behind the pelvis (indicated by arrow 3) occurred a rude triangular point, the basal section of a broad corner-notched point, 3 side-notched points (Plate 56, figs. 21, 22, 30), a chert core, 4 thick chert flakes, 5 unworked antler tines, an antler tine projectile point with basal spur (Plate 56, fig. 37), and a muskrat mandible, while 5 small discoidal marine shell beads lay on the sternum.

Burial 5 lay beside a small granite boulder and consisted only of the crowns of the teeth of a child about 5 years of age and traces of rotted long bones. Closely grouped beside them under a 6 x 6 inch sheet of mica (Plate 56, fig. 10), had been placed 5 flake knives of translucent black, gray, and red chalcedony from the Flint Ridge quarries in Ohio (Plate 56,

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[1] Ritchie, 1940a, pp. 30-33.

[2] Squier, 1851, pp. 56-57.

Plate 57. Multiple Bundle and Flexed Burial
Sea Breeze Site
Point Peninsula Focus, Vine Valley Aspect

Burial 3, in background, consists of much-decayed skulls and long bones of three individuals (arrow 1), accompanied by 15 rude cache blades (arrow 2). Burial 4, in foreground, has grave goods below pelvis (arrow 3).

figs. 19, 20, 25); 8 flakes of local Onondaga chert; the basal half of a cache blade; 2 rude side-notched chert points; 4 large points of grayish white Ohio chalcedony (Plate 56, figs. 26, 35, 36); a native copper awl (Plate 56, fig. 38); an antler handle having embedded in it the fragment of a similar awl (Plate 56, fig. 39); a conical antler arrowpoint (Plate 56, fig. 40); a sandstone abradingstone (Plate 56, fig. 9); fragments of the plastron of a soft-shell turtle; and 2 cutting tools made by inserting a beaver incisor transversely through a slotted antler tine. One of these, still attached to the block of sand containing 3 unworked beaver incisors, where it was solidified in order to preserve it intact, is pictured as fig. 41 of Plate 56.

Burial 6. In this grave the cremated bones of an adult rested directly upon an adult bundle burial, which being unburned, proved that the cremation was accomplished elsewhere. About the periphery of the grave were half a slate gorget, a large gray chert point (Plate 56, fig. 28), and 2 flat striped slate objects of unknown use (Plate 56, figs. 5, 15).

Burial 7, a very puzzling feature, could not be interpreted, unless on the assumption of subsequent disturbance. Scattered about randomly in the fill of a large pit, 7 feet in diameter and 4 feet deep, which was streaked with charcoal and what appeared to be red hematite paint, were the fragments of an adult skeleton. At different elevations near one end were recovered a striped slate object (Plate 56, fig. 6) like those from burial 6, and a somewhat similar artifact of sandstone, plano-convex in section, with chisel-edged narrow extremity (Plate 56, fig. 7), which may have been a grinding tool for perforating the type of instruments shown in the same plate, fig. 41.

Burial 8. A sewer line bordering the macadam road had destroyed the whole upper portion of this skeleton to the mid-chest. The remaining bones indicated an adult male, flexed on the left side, occupying a north-south axis with head to the south, and arms folded across the chest. No grave goods were present but they may previously have existed near the skull.

Burial 9 was that of a large adult male, very tightly flexed, lying on the left side, heading southeast and facing southwest. As in the preceding instances the bones were very greatly deteriorated. Thirteen inches in front of the legs, a heap of grave goods was uncovered, the bone articles in such friable condition that it was necessary to remove the offering in a block of sand, later exposing the artifacts gradually in the laboratory and treating the osseous material with ambroid. The following implements were found in the block: a deer metapodial beaming or dehairing tool (Plate 56, fig. 43); a large unworked elk antler tine (Plate 56, fig. 44); 3 unworked long bones of an unidentified mammal, perhaps a young bear; both halves of an unworked woodchuck mandible (Plate 56, fig. 17); the superior incisor teeth of a beaver in place in part of the maxilla (Plate 56, fig. 33); 3 unworked beaver incisors; 4 unworked bear canines (Plate 56, fig. 32); a rough splinter bone awl; portions of 5 awls made from ground splinters of bird bone; a large point of mottled orange and creamy white Ohio chalcedony (Plate 56, fig. 27); a chert chip and spall; and 9 abradingstones, 8 being slightly rubbed sandstone beach pebbles (Plate 56, fig. 8), the ninth (Plate 56, fig. 16) carefully finished and closely resembling Plate 56, fig. 7, from burial 7.

Plate 58.

Potsherds
From Middens on Kipp Island Site
Point Peninsula Focus, Vine Valley Aspect

All rim sherds except 3, 6; all tempered with medium to coarse grit; fig. 3 shows fracture along definite coil lines. 1, slightly everted rim, thickened lip, linear dentate ornamentation; 2, straight rim, thickened lip, circular punctate and cord-wound-stick impressions; 3, straight-walled fragment, horizontal linear dentate and vertical linear cord-wrapped-stick decoration; 4, straight rim, toothed-stamp imprints; 5, straight rim, constricted neck, pseudo-cord impressions (like beads on a string), executed evidently with dentate stamp (a common Woodland decoration, not generally specifically referred to in this work); 6, oval dentate embellishment on slightly curved wall; 7, straight rim, constricted neck, partially smoothed over fabric-malleated surface, rude triangular punctate ornamentation; 8, constricted neck, everted rim, linear dentate and criss-cross patterns; 9, slightly constricted neck, everted rim, rocker-stamp dentate and broad incised elements; 10, mildly constricted neck, straight rim, fabric-malleated surface overlaid by oblique (from lip) and horizontal rows of cord-wrapped-stick impressions; 11, constricted neck, straight rim, linear and criss-cross dentate-stamp ornamentation, one large circular punctate partially preserved on right edge; 12, constricted neck, mildly everted thickened rim, fabric-impressed exterior; 13, constricted neck, straight rim, short irregular rows of oval dentate impressions; 14, much-constricted neck, everted rim, sharply outsloping lip bearing broad oblique incisions, surface cord-malleated.

Decoration on lip and inside rim of figs. 1, 2, 4, 5, 7-9; other interiors plain and smooth except figs. 10, 13, which are channeled.

The flake knives and broad notched points of Flint Ridge chalcedony from this site are characteristic Hopewellian traits, and the shaped sandstone abradingstones have their counterpart from mounds 17 and 25 of the Hopewell group.[1] Certain other objects, viz., mica, gorgets, cache blades of this character, copper awls and beads, and small notched points, while not as diagnostic, could well be included in the scope of the Hopewellian culture, as could the burial practices found here. However, the last group of enumerated artifacts (except the rude, thick, side-notched points, which seem diagnostic of the New York Hopewellian and were probably only for mortuary use) and the mortuary customs are also recorded Pt. Peninsula traits, as are the beaming tool, conical arrowpoint, and especially the hafted beaver incisors and deposits of unworked bone with burials.

This site affords the best evidence thus far found in New York of Hopewellian influence on the Pt. Peninsula Focus.

Kipp Island Component (Plate 53, site 5)

The Seneca River from the foot of Cayuga Lake north to Howland Island traverses a wide marshland known as the Montezuma Swamp. While now largely a cultivated muck bottom, it was, prior to the lowering of the water-table by the Barge Canal, a wet fen frequented by multitudes of water fowl and other aquatic life.

Several important Point Peninsula sites have been found along this section of the river, the largest situated upon Kipp Island, an oval drumlin about one third of a mile long, rising rather sharply well above the surrounding swale, on the east side of the stream, opposite the point of confluence of the Clyde River, Seneca County. Beyond doubt at the time of occupation the course of the Seneca River passed within 40 feet of the southwest side of the island, but now many rods of boggy ground intervene. This statement is supported by evidence of an abandoned channel and by the fact that here the refuse, investing the entire gently sloping south end of the island, from a few to some 15 inches deep, is heaviest. From this black mantle collectors have over a period of several years taken potsherds (Plate 58) steatite pot fragments, arrowpoints, many harpoons, antler handles for copper awls, and other objects which, corresponding typologically with the grave goods from the nearby cemetery, evidently link the two.

Adjacent to the occupied zone, on the east side of the island, is a steep sloping spur or promontory of fine sand and gravel, the site of the large cemetery believed for many years to have been exhausted by the depredations of local farmers who, beginning more than 30 years ago, picnicked on the island and dug graves for amusement. Nothing is known of the character or whereabouts of the probable large number of objects so removed, but in examining various old poorly labeled collections about the region the writer has seen aston-

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[1] Shetrone, 1926, pp. 115-116.

Plate 59.

Shell and Stone Artifacts
From Burials on Kipp Island Site
Point Peninsula Focus, Vine Valley Aspect

1, Marginella shell beads, with ground spire; 2, 4, flat rectangular shell beads, from conch columella; 3, long tubular shell beads, also from conch columella and a, tubular bone bead; 5-7, short tubular shell beads; 8, 14-18, 20, 22-25, corner-notched points, the convex edged specimens may be knives; 9, thick side-notched point; 19, round-ended side-notched point; 10, 11, rude triangular points; 12, end scraper; 13, triangular end scraper; 21, 26, 31-34, 38-40, 46-48, thick ovate and rectanguloid cache blades; 27, pendant; 28, bar amulet, incised on either side; 29, thin trianguloid knife; 30, drill, based on rough spall; 35, drill, expanded side-notched type; 36, small plano-convex adze; 37, large ovate knife; 41, trianguloid celt, bit secondarily used as sinewstone; 42, rectanguloid celt; 43, 44, large plano-convex adzes; 45, tabular whetstone.

Collection of Carl Armbruster, Cayuga, New York.

Material: 8, 10-13, 16-20, 22-25, 29, 30-32, 35, 37, gray Onondaga chert; 9, honey-colored chalcedony; 14, 15, 34, argillite; 21, 26, 33, 38-40, 46-48, yellow and brown jasper; 27, 28, slate; 41, gabbro; 42, sandstone; 36, 43, 44, "greenstone"; 45, sandstone.

ishingly fine stone, bone, and copper implements, which in the light of recent discoveries, he would incline to attribute to this cemetery. Wanting proof, however, they are omitted from the discussion.

In the spring of 1938 woodchuck activity resulted in the discovery that the slopes, as well as the much dug over top of the spur, harbored burials and during the summer, several collectors vigorously dug virtually every inch of the undisturbed terrain, finding approximately 23 new graves, some of them holding multiple burials, and a host of very important artifacts.

Owing to the secrecy and rapidity with which this work was done, the writer, excavating at Brewerton, learned of it too late to observe the actual digging, but he was provided with data and permission to photograph the material obtained by Messrs. Carl Armbruster, residing near Cayuga, New York and Maynard A. Cramer of Auburn, to whom he records his appreciation. Mr. Cramer, who had leased the excavation privileges, very kindly permitted the museum to make a search for possible additional evidence from the refuse and burial areas. A small, much-mutilated mound, shown to be artificial, was also sampled on the west side of the island, a few hundred yards northwest of the cemetery. It will be referred to again under the Hopewellian Phase.

The remarkable character of the Kipp Island discoveries warrants the recording of as complete a picture as it is possible to provide from the fragmentary data. The photographs made by the writer at Mr. Cramer's home (Plates 60, 62) illustrate the range of types obtained by him, while the overlapping series from Mr. Armbruster's collection, appear on Plates 59, 61, 63,[1] and a complete inventory of all material from this site may be had from the trait table on pages 354-366.

Burials Recorded by Mr. Armbruster.

Burial 1. Located on a small spur about two hundred feet north of the large cemetery.[2] Contained a notched netsinker, unworked bear canine, 4 worked beaver incisors, a stemmed point and a heron (?) bone.

Burial 2. Adult, flexed, face southwest, head northwest, depth 27 inches. Arm band (Plate 63, figs. 6, 7) around each wrist; comb (Plate 61, fig. 14; Plate 87, fig. 6) behind skull. Near right hand, which lay beside left shoulder, were the following objects: 4 serrated bone tubes (Plate 63, figs. 11-13, 22), 3 mammal tibiæ with condyles broken or cut away (Plate 63, figs. 20, 21), 2 much-decayed shell pendants (?), 2 imperforate dog canines (Plate 61, fig. 13), a group of unworked long bone fragments (Plate 63, figs. 17-19), a small

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[1]The writer is very grateful to Mr. James Ward of Cayuga, for allowing him to utilize the lighting facilities of his home in order to make these and other photographs.

[2]About 8 graves were dug here by various persons and most of the material removed has been seen by the writer. While evidently it is a small outlying cemetery of the same occupation, burials herefrom will be so designated in the description.

Plate 60.

Stone Artifacts
From Burials on Kipp Island Site
Point Peninsula Focus, Vine Valley Aspect

1, 2, thin trianguloid cache blades; 3, 6, 8-10, 14-16, triangular points; 4, broad stemmed point; 5, narrow stemmed point; 7, 13, thick side-notched points; 11, triangular drill; 12, 17, prismatic flake knives; 18-26, thick trianguloid cache blades; 27, drill, based on rough spall; 28-31, plano-convex adzes, evidently "killed;" 32. rhomboidal pendant; 33, bolas-stone.

Collection of Maynard A. Cramer, Auburn, New York.

Material: all chipped stone objects of gray Onondaga chert; adzes of greenish gray igneous rock; 32, slate; 33, sandstone.

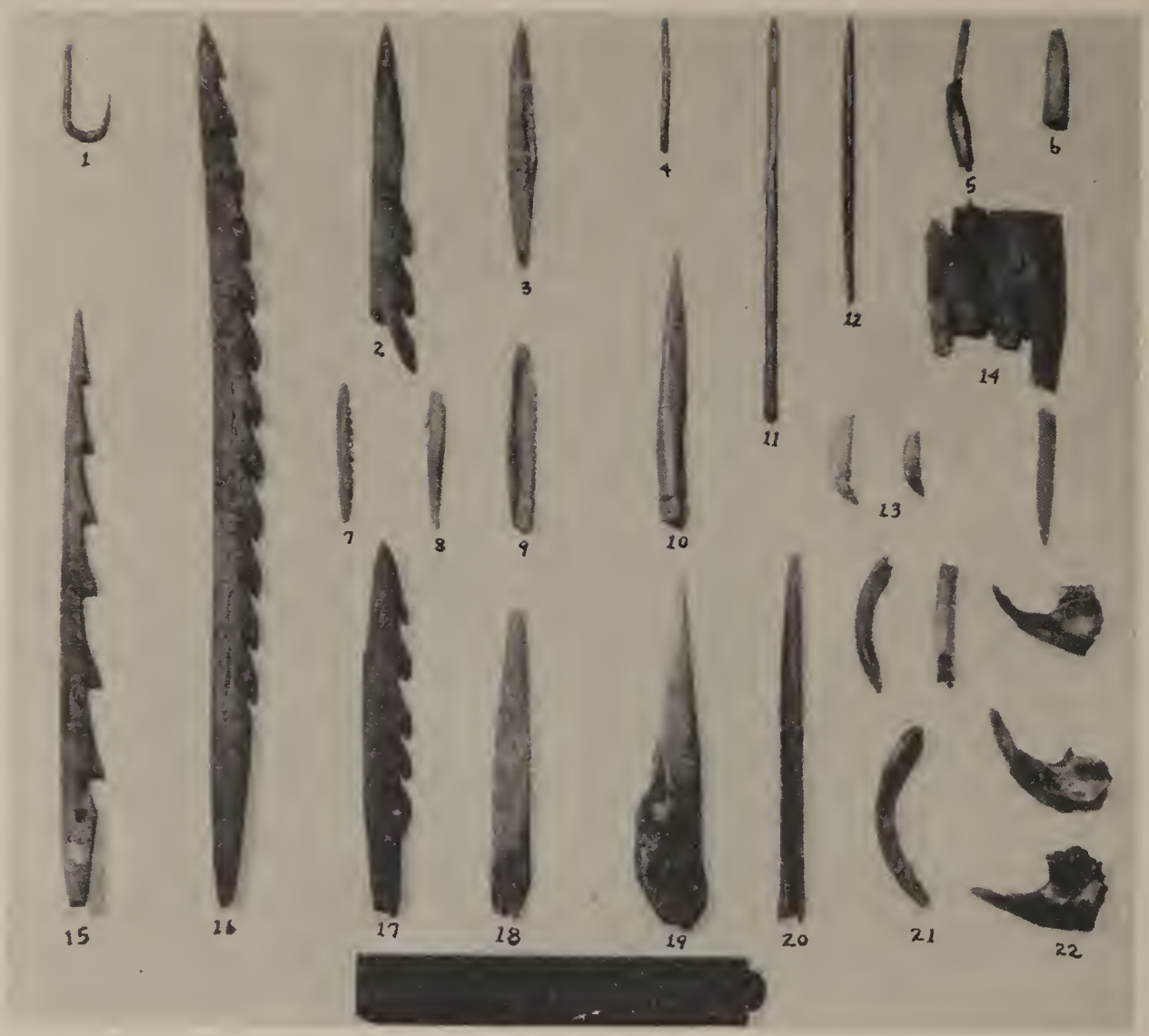

Plate 61.

Bone and Antler Artifacts
From Burials on Kipp Island Site
Point Peninsula Focus, Vine Valley Aspect

1, fishhook; 2, fragment of large, multiple unilaterally barbed harpoon; 3, 7, 9, projectile points or harpoons, exhibiting weak multiple unilateral barbs; 4, bone pin with flattened incised head; 5, blunt copper awl in antler handle; 6, antler awl handle; 8, harpoon or point fragment; 10, polished splinter awl; 11, bone pin, nearly round in section, with multigrooved head; 12, similar pin, upper end decomposed; 13, unmodified dog canines; 14, fragmentary decorated antler comb; 15, bone harpoon, with multiple bold unilateral barbs and gouged line hole; 16, antler harpoon (longest example on record for New York State), with prominent multiple unilateral barbs; 17, antler harpoon, with large multiple unilateral barbs and drilled line hole; 18, bone harpoon with weak multiple bilateral barbs; 19, deer ulna awl; 20, polished splinter awl; 21, beaver incisors whole, with chisel or gouge-shaped edge; 22, cut anterior sections of beaver mandibles.

Collection of Carl Armbruster, Cayuga, New York.

plano-convex adze (Plate 59, fig. 36), a rude trianguloid chert scraper (Plate 59, fig. 13), 2 rude chert cache blanks (Plate 59, fig. 31), and a bone awl.

Burial 3 (small cemetery). Adult with triangular point.

Burial 4. Flexed adult with bone harpoon (Plate 61, fig. 15), clam shell, and fish bones and scales (food remains ?).

Burial 5. Adult, flexed, face east, head south, depth 41 inches. Grave goods in heap 12 inches above body. Large beaming tool (Plate 63, fig. 14), 4 beaver and 3 porcupine incisors (unmodified), large fragment of "raw" bone, pebble hammerstone, large ovate knife (Plate 59, fig. 37), corner-notched point (Plate 59, fig. 8), rude drill (Plate 59, fig. 35), end scraper (Plate 59, fig. 12), rude triangular point (Plate 59, fig. 10), celt (Plate 59, fig. 42), and retouched flake knife.

Burial 6. (small cemetery). Flexed adult accompanied by 5 unworked antler tines and a thin side-notched point.

Burial 7. Child, flexed position, accompanied by 3 serrated bone tubes (Plate 63 fig. 23).

Burials 8, 9. No notes.

Burial 10. A multiple flexed burial of great interest. Five adults lay in a large oval pit, with feet toward center. Each had a cluster of grave offerings placed near the skull. Contents as follows, Group A: whetstone (Plate 59, fig. 45), copper awl in antler handle (Plate 61, fig. 5), antler awl handle (Plate 61, fig. 6), large adze (Plate 59, fig. 43), celt reworked for sinewstone (Plate 59, fig. 41), celt in process, 3 large and 3 small flaking tools (Plate 63, figs. 3-5, 9), 11 rude jasper cache blades (Plates 59, figs. 26, 33, 38-40, 46-48), 3 cut beaver mandibles (Plate 61, fig. 32), slate pendant (Plate 59, fig. 27), bar amulet (Plate 59, fig. 28), round-ended point (Plate 59, fig. 19), rude side-notched point (Plate 59, fig. 25), chalcedony side-notched point (Plate 59, fig. 9), triangular knife (Plate 59, fig. 29), and a lump of rotted iron pyrites.

Groups B and C:[1] 4 harpoons (Plates 61, figs. 2, 3, 16, 17: 86, figs. 2, 4, 7); 2 worked bear radii (Plate 63, figs. 15, 16); 3 awls (Plate 61, figs. 10, 19); 2 small flakers; 2 large flakers (Plate 63, figs. 1, 2); a rude argillite cache blade (Plate 59, fig. 34); 4 points, 2 of argillite (Plate 59, figs. 14, 15, 22, 23); and 15 unworked pieces of bone, the entire cache embedded in red ochre.

Group D: 2 harpoons (Plates 61, figs. 8, 18; 86, fig. 8); 3 beaver incisors, one truncated (Plate 61, fig. 21); 2 bone pins (Plate 61, figs. 4, 11); 2 bone awls (Plate 61, fig. 20); a chert drill (Plate 59, fig. 30); a rude cache blade; 2 side-notched points; many pieces of "raw" bone and food (?) remains of turtle and fish, all sprinkled with red paint.

Group E: 7 flat shell beads (Plate 59, figs. 2, 4, 5, 6), 2 short tubular shell beads (Plate 59, figs. 5, 6), an antler fishhook (Plate 61, fig. 1), 2 barbed points or harpoons (Plates 61, figs. 7, 9; 86, fig. 4); 3 corner-notched points (Plate 59, figs. 16, 18, 24), a triangular point (Plate 59, fig. 11), a rude cache blade (Plate 59, fig. 32), a sandstone whetstone, and a large unmodified antler tine.

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[1]Not listed separately by Mr. Armbruster.

Plate 62. Pottery, Bone and Antler Artifacts
From Burials on Kipp Island Site
Point Peninsula Focus, Vine Valley Aspect

1, slightly bent pottery elbow pipe; 2-5, flat antler gaming pieces (?); 6, copper awl in antler handle; 7, 8, multiple unilaterally barbed harpoons; 9, awl, from split deer metapodial bone; 10, deer scapula scraper; 11, 12, barbed bone fishhooks; 13, multiple bilaterally barbed harpoon; 14, thin, curved, perforated needle; 15, fox mandible, showing few cuts on ascending ramus; 16, fragment of large ornamented antler comb; 17, large ornamented antler comb; 18, antler haft for beaver incisor; 19-22, unworked pieces of antler and bone.

Collection of Maynard A. Cramer, Auburn, New York.

Plate 63. Bone and Antler Artifacts
From Burials on Kipp Island Site
Point Peninsula Focus, Vine Valley Aspect

1-5, large cylindrical antler flaking tools; 6, 7, antler armbands, perforated at either end, decorated with incised cross-striated bands; 8-10, small cylindrical antler flakers (10 has lump of decomposed iron pyrites, from fire-making outfit, fused on one end); 11-13, 22, 23, bone tubes, serrated at one or both ends (22 is engraved); 14, deer metapodial beaming tool; 15, 16, bear radii, showing wear and polish from use; 17-19, unworked long bone fragments; 20, 21, sections of partially worked long bone (piece of iron pyrites fused on lower end of 21).

Collection of Carl Armbruster, Cayuga, New York.

Burial 11 (small cemetery). Flexed adult, depth 43 inches. Grave goods consisted of over 100 Olivella shell beads, a box turtle shell rattle (containing pebbles), 5 long shell beads, and powered hematite paint.

Burials Recorded by Mr. Cramer

Burial 1. Multiple interment (in pit 64 inches x 47 1/2 inches x 41 inches). One side of pit walled up with small boulders, chinked with pebbles, apparently to prevent slump of gravel. Contained remains of 4 adults in poor condition (due to clay bottom), headed west, and facing east or south; 3 flexed, side by side, the fourth, between two of the others, disturbed by the addition of the last in line leaving only the skull, leg bones and a few other portions in place. Thus we may suspect that in some of these large graves burials were added at different times. Between two skeletons lay a muller and bolas-stone (Plate 60, fig. 33). Over the skull of another was a tent-like arrangement of two stone slabs. Within this shelter, on either side of the head, lay 2 "seed-shaped" antler gaming pieces (?) (Plate 62, figs. 2-5), like the object from the Jack's Reef grave (Plate 69, fig. 13). By the right hand, at the skull top, were 3 chert points, shown as figs. 4-6 of Plate 60. Near the left foot were piled in superimposed rows 128 rude chert cache blades, like figs. 18-26 of Plate 60, and a finished point, illustrated in the same plate, as fig. 3. At the west end of the rows of cache blades lay a heap of 4 broken adze bits, the polls being placed on the opposite side (Plate 60, figs. 28-30, 32). It is difficult to escape the conclusion that these tools were intentionally broken or "killed," a practice suggested by equally cogent evidence from other Pt. Peninsula sites.

Burial 2 (small cemetery). An adult female in fair condition, flexed, facing southwest, in grave 34 inches deep. Two thin cache blades (Plate 60, figs. 1, 2) in front of face,

Burial 3 (small cemetery). Close to burial 2. Flexed adult in poor condition, facing northwest. Near face and hand lay 3 unworked chert spalls.

Burial 4. In pit 61 inches deep reposed an adult male in excellent condition, on left side, facing south and heading east. Bones covered 2-3 inches deep with red ochre. Left hand 8 inches below lower jaw, and 3 inches from fingers lay chert drill (Plate 60, fig. 27). On right hand rested hafted copper awl (Plate 62, fig. 6). Under right elbow occurred slate pendant (Plate 60, fig. 32).

Burial 5. Much broken (disturbed ?) and decayed adult skeleton in grave fossa 28 inches deep. In pocket in south wall, 7 inches above floor, were piled the following grave goods: 4 unworked deer tines (Plate 62, figs. 19, 20), half of a large comb (fig. 16, same plate), 2 unmodified deer metapodial bones (Plate 62, fig. 21), 4 long sections of split bone (Plate 62, fig. 22), a handle for a beaver tooth cutting tool (Plate 62, fig. 18), 4 beaver incisors, 2 fox mandibles (Plate 62, fig. 15), one bone needle (Plate 62, fig. 14), a bone awl (Plate 62, fig. 9), 2 deer scapula scrapers (Plate 62, fig. 10), a large fish spine, 7 chert and one quartzite flake knives, a drill and 2 broken points (Plate 60, figs. 7, 9).

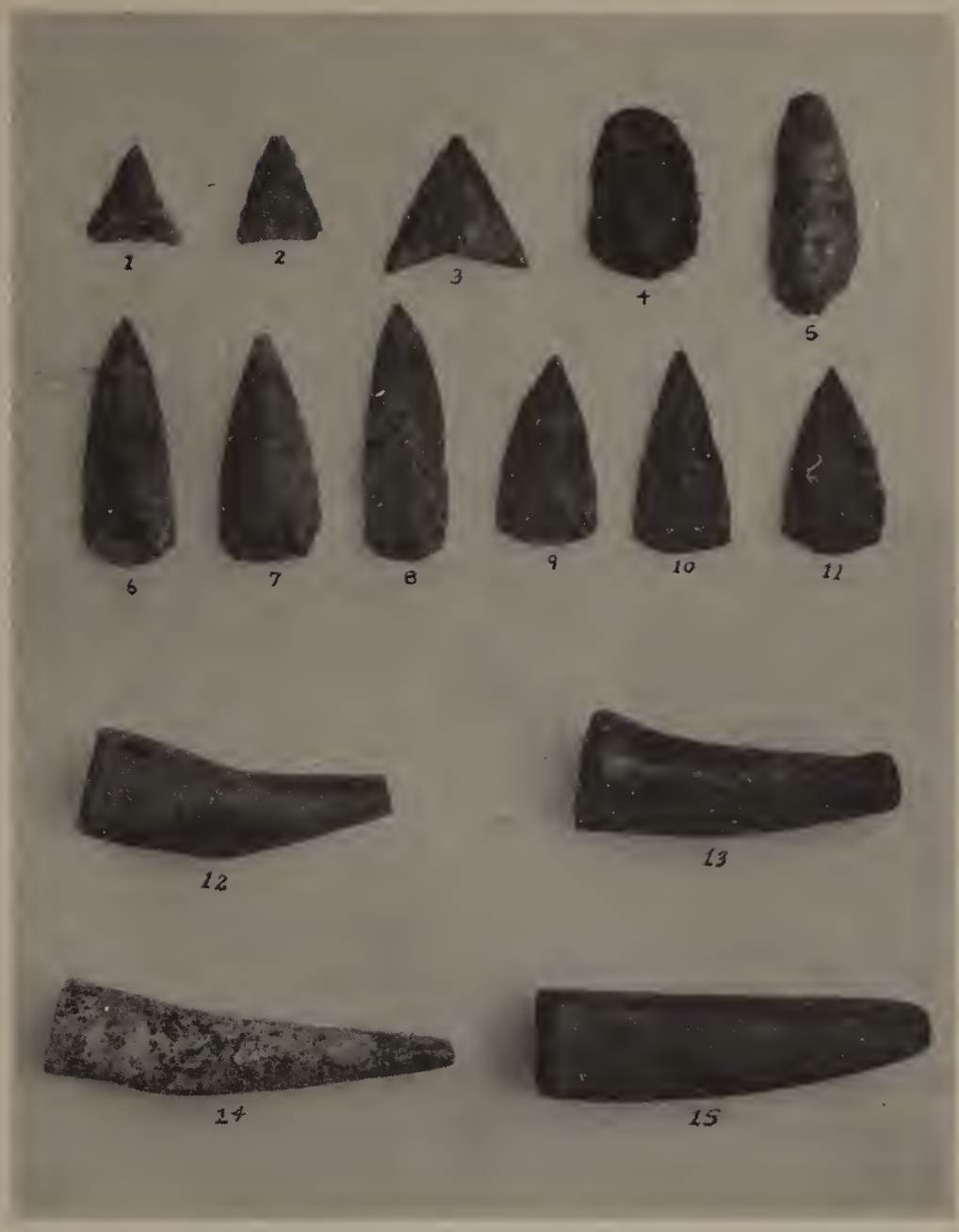

Plate 64.

Chipped Stone Objects and Pipes
Burial Goods, René Menard Bridge Site, No. 1
Point Peninsula Focus, Vine Valley Aspect
Length of fig. 14 is 4 1/8 inches

1-3, triangular projectile points; 4, 5, ovate end scrapers; 6-11, thin trianguloid cache blades; 12-15, slightly bent elbow pipes, bowl and stem of 15 rectangular in section, of others oval or round.

Collection of Carl Armbruster, Cayuga, New York

Material: 1-11, gray Onondaga chert; 12, 13, 15, pottery; 14, limestone.

Plate 65.

Bone and Antler Objects
Burial Goods, Rene Menard Bridge Site, No. 1
Point Peninsula Focus, Vine Valley Aspect
Length of fig. 11 is 7 inches

1, 2, small cylindrical antler flaking tools; 3, conical antler arrowpoint; 4, bear canines, ground flat on one side, perforated through flat surface and apex; 5, immature lynx canines, perforated through one side; 6, large cylindrical antler flaker; 7, antler wedge or chisel; 8, hafted (?) beaver incisor (tooth found near but not in antler, as shown); 9, 10, multiple unilaterally barbed harpoons; 11, multiple bilaterally barbed harpoon; 12, hafted beaver incisor, circular incisions around end of antler tine (dark gum-like substance still present around tooth in oval slot).

Collection of Carl Armbruster, Cayuga, New York.

Burial 6. Flexed adult male, face southwest, head northeast, poor condition, depth 38 inches. Notched point (Plate 60, fig. 13), under ribs, pottery pipe (Plate 62, fig. 1) against occiput, 2 large potsherds of crude ware on grave floor, near skeleton of bull frog, large fish and 16 land snail shells (probably food). Nine chert flake knives before face.

Burial 7. Adult male (?) in poor condition, flexed on left side, face south, head northeast, depth 33 inches. Hands before face. Close by lay 2 barbed fishhooks (Plate 62, figs. 11, 12). Harpoons (figs. 7, 8, 12, same plate) occurred near feet. Close to skull were found 7 triangular chert points, 2 broken (Plate 60, figs. 8, 10, 14-16), a triangular drill (Plate 60, fig. 11), 2 point rejects, and 6 flake knives (Plate 60, figs. 12, 17).

Burial 8. Found and partially dug by farm boy who broke skull and comb. Adult, head east, depth 29 inches. Large comb (Plates 62, fig. 17; 87, fig. 7) near skull, 5 long tubular conch columella beads at neck; a triangular and a side-notched chert projectile point and a fragmentary flat needle found by Mr. Cramer in spoil heap.

Burial 9. Much-decayed skeleton of child in flexed position, headed northeast, facing southwest, in grave 26 inches deep. Crude chipped hoe of sandstone over skull.

Burial 10. Adult, much disintegrated, flexed, face east, head southwest, depth 18 inches. In grave soil occurred half a chert drill, a broken projectile point and 3 partially chipped chert cores. Snail shells and plain thick potsherd on grave bottom.

Other Burials from the Small Cemetery

A paint-covered skeleton is known to have been dug out here by a resident of the neighboring hamlet of Montezuma but nothing can be learned about it.

Mr. Herbert Bigford of Earlville, New York, made an important find here and the writer is obliged to him for the following information and permission to illustrate the tubular pipe of striped slate, the interior still heavily coated with dottle, pictured on Plate 86, fig. 32. It is the first such discovery on record for New York and established at least locally, the cultural provenience of the cigar-shaped form of stone pipe (not to be confused with the blocked-end type of the Middlesex Focus). Tubular pottery pipes are recorded for the Pt. Peninsula complex from the West Rush (Wray) and Oberlander, No. 2, components (see Plate 54, fig. 52).

The burial found by Mr. Bigford was that of an adult male, flexed on the right side, headed west and facing south, at a depth of 16 inches. The whole thorax was covered with pieces of calcined (?) bone, among which lay the stone tubular pipe referred to, a deer bone splinter awl, and a multiple unilaterally barbed bone harpoon, similar to several found in the main cemetery.

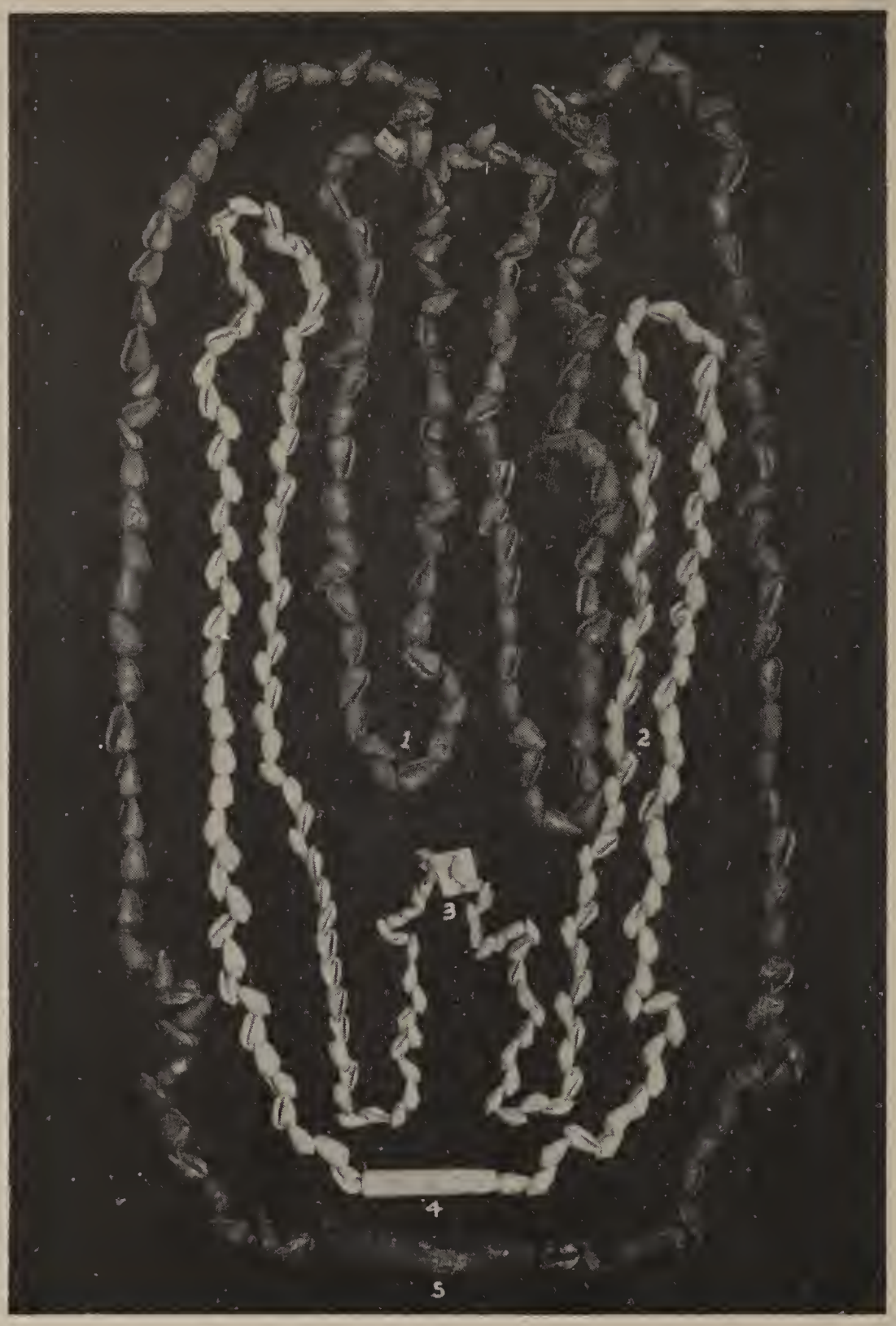

Plate 66.

Shell Beads
Burial Goods, René Menard Bridge Site, No. 1
Point Peninsula Focus, Vine Valley Aspect

1, Marginella beads, covered with red paint; 2, Marginella beads; 3, Olivella and Marginella beads; 4, 5, long tubular beads made from conch columella, latter covered with red paint.

Collection of Carl Armbruster, Cayuga, New York

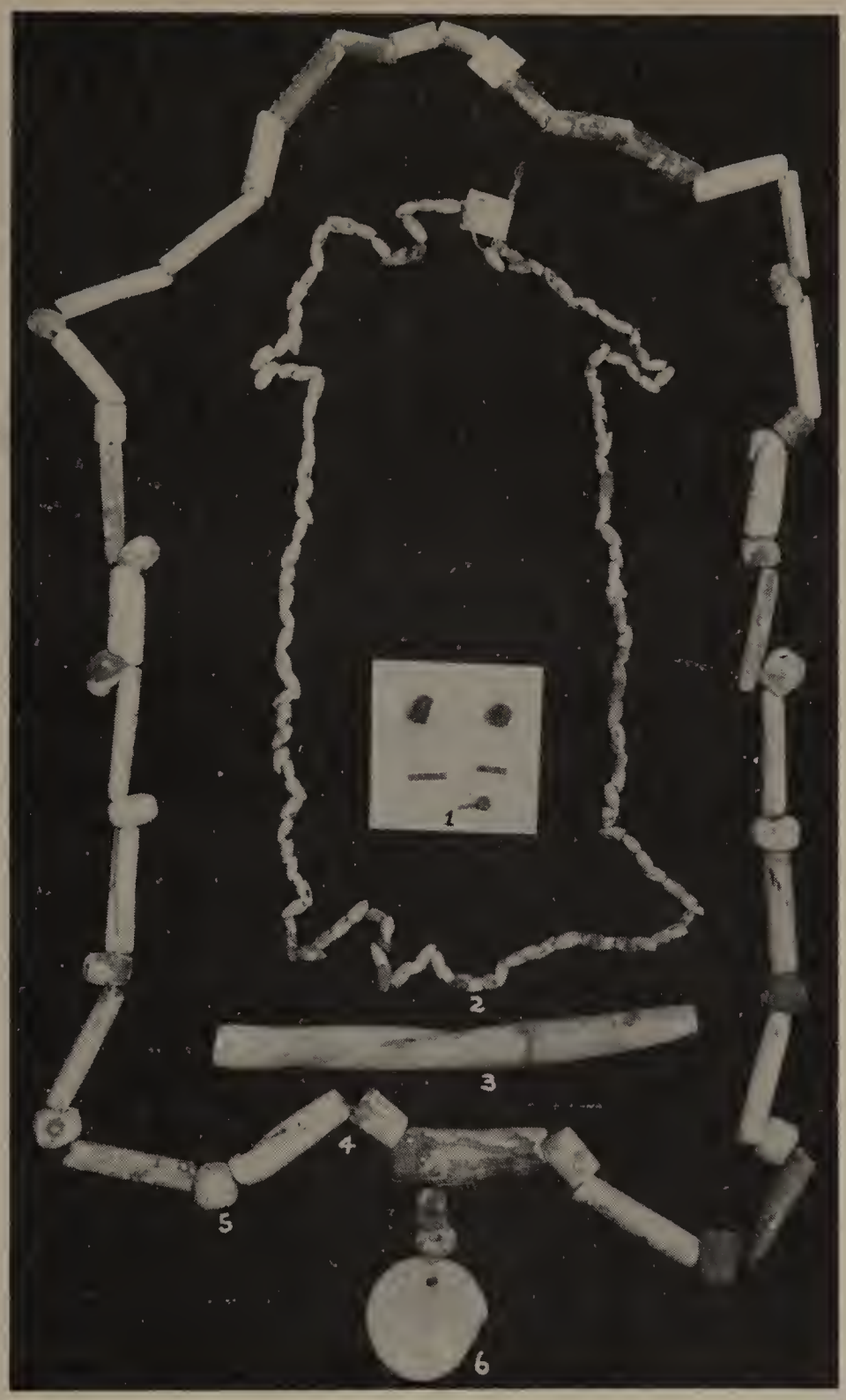

Plate 67. Beads and Pendant
Burial Goods, Rene Menard Bridge Site, No. 1
Point Peninsula Focus, Vine Valley Aspect

1, rolled copper beads; 2, Olivella shell beads; 3, long tubular shell bead, made from conch columella; 4, short tubular conch columella beads; 5, oblate spheroidal beads, from conch columella; 6, pendant, from conch shell.

Collection of Carl Armbruster, Cayuga, New York.

René Menard Bridge Component, No. 1 (Plate 53, site 6)

The prominent gravel terrace bordering the east bank of the Seneca River south of René Menard Bridge, on highway U. S. 20, Cayuga County, is the locus of two small cemeteries of the culture we have been describing. In 1935 and again in 1938 digging was done here by Mr. Carl Armbruster, a local resident, from whom the data recorded below, amplified by a study of his collection, were obtained.

Component No. 1 occupied a low rise, about 40 rods east of the river shore and some 1,000 feet from the bridge, and consisted of at least 10 burials, all flexed, several multiple and nearly all with mortuary objects, like those pictured on plates 64-67.

Lack of adequate notes made during excavation renders a description of each burial impossible, but at least one, inhumed at a depth of approximately 4 feet, was covered with red paint and yielded the stained Marginella and tubular shell beads shown on Plate 66, figs. 1, 5, and the harpoon seen as fig. 11 of Plate 65. From another grave came a hafted beaver incisor (Plate 65, fig. 12), 2 ground and perforated bear canines, with Hopewellian parallels (Plate 65, fig. 4), and 3 perforated lynx canines (fig. 5, same plate), all 5 stained from the copper beads accompanying them (Plate 67, fig. 1).

Still another is described as having been outlined along either side by a double row of thin cache blades, 81 in all (Plate 64, figs. 6-11).

Literally thousands of shell beads of the varieties pictured on Plates 66 and 67 were secured, a record number for a site of this culture.

A few skeletons were directly covered by large stone slabs and in some instances the grave goods occurred in a pocket in the wall.

René Menard Bridge, Component No. 2 (Plate 53, site 6)

Approximately 600 feet southwest of the first dug burial plot, a second, similarly situated on a slight rise, but on the slope to the river, was explored by Mr. Armbruster, who found therein 11 skeletons. A synopsis of his notes, clarified by interrogation, follows:

Burial 1. Adult, flexed, head south, face east, depth 22 inches. Covered with red paint, 3 inches thick on thorax. Bar amulet (Plate 68, fig. 37) near right hand, 2 unworked Unio shells (Plate 68, fig. 39) on hands, 22 graphite paintstones[1] (Plate 68, fig. 38), engraved haft for beaver tooth knife or engraver (Plate 68, fig. 41), and bone awl (Plate 68, fig. 40) near arm.

Burial 2. Extended adult, 43 inches deep.

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[1]These are thought by mineralogists to have come from St. Lawrence County, New York.

Plate 68.

Grave Goods, Grouped by Burials
René Menard Bridge Site, No. 2
Point Peninsula Focus, Vine Valley Aspect

1, straight, undecorated potsherd from grave fill; 2, thick side-notched point, grave fill; 3, harpoon, with single barb and line hole, from pit among burials; 4, thin, and 5, 11, thick side-notched points; 6, fish and turtle food (?) bones; 7, 8, deer scapula scrapers; 9, small discoidal shell beads; 10, straight chipped drill; 12, unworked deer antler tine; 13, antler harpoon, with single barb and line hole; 14, 20, 27-29, 40, splinter awls; 15, drill, with expanded base; 16, worked piece of antler; 17, 36, Marginella shell beads; 18, unmodified dog canines; 19, 21, beaver incisors, split, edges ground; 22, 31, beaver incisors; whole, edge gouge-shaped; 23-26, conical antler projectile points; 30, cylindrical pestle; 32, copper awl; 33, Olivella shell beads; 34, wolf canine perforated by scraping; 35, conical antler point, in process; 37, bar amulet; 38, graphite paint-stones; 39, unworked mussel shell, containing red paint; 41, antler haft for beaver incisor (arrow points to oval slot), with rude incised cross-hatch decoration.

Collection of Carl Armbruster, Cayuga, New York.

Material: 2, 4, 5, 10, 11, 15, gray Onondaga chert; 30, sandstone; 37, striped slate.

Burial 3. Infant, in flexed position, head south, face east, poor condition. 253 Marginella shell beads (Plate 68, fig. 36) and a partially worked out conical antler arrowpoint Plate 68, fig. 35) lay on the chest.

Burial 4. Close to surface and partly destroyed by cultivation.

Burial 5. At 12 inches a flexed adult skeleton, facing southeast and heading northeast, came to light. A foot deeper was uncovered a similar burial, facing west and heading north. The perforated wolf canine shown on Plate 68, fig. 34, was its only accompaniment. Two feet below lay 6 skulls upon a heap of long bones.

Burial 6. A child, flexed, headed southeast and facing northeast, at 35 inches from the surface. About 150 Olivella shell beads (Plate 68, fig. 33) and a copper awl (fig. 32) lay near the chest.

Burial 7. Flexed adult, heading southeast and facing northeast, at a depth of 21 inches. Light stain of red paint in grave. Antler harpoon (Plate 68, fig. 7), very like older specimens to be described; chert drill (Plate 68, fig. 15); splinter awl (Plate 68, fig. 14); and several unmodified or partially reduced pieces of antler (Plate 68, figs. 12, 16) lay near left hand.

Burial 8. Adult, extended position, head south, depth 27 inches. Chest and skull covered with red paint. Five conical antler points (Plate 68, figs. 23-26) at left hand, several hundred Marginella shell beads (Plate 68, fig. 17) over pelvic area and upper legs, several hundred small discoidal shell beads (Plate 68, fig. 9) near neck. Other artifacts comprise 4 splinter awls (Plate 68, figs. 20, 27-29); 3 worked beaver incisors (Plate 68, figs. 19, 21, 22); 3 deer scapula scrapers (Plate 68, figs. 7, 8); one chert point (Plate 68, fig. 11); one drill (Plate 68, fig. 10); 5 imperforate dog canines (Plate 68, fig. 18); numerous fish vertebrae, plastron fragments of the soft-shell turtle, and bird bones, probably food remains (Plate 68, fig. 6); and many long split sections of deer bone, evidently for the manufacture of implements.

Burial 9. Extended adult, head south, depth 30 inches. Along right femur lay the pestle shown as fig. 30 (Plate 68) and one gouge-shaped beaver tooth (fig. 31, same plate).

Burial 10. Child, in extended position, head south, depth 19 inches.

Burial 11. A similar burial at 23 inches. Red paint on skull. Two chert points (Plate 68, figs. 4, 5) behind occiput. Scattered among the graves were several refuse pits which yielded the articles shown as figs. 1-3 on same plate.

Jack's Reef Component (Plate 53, site 7)

This single and important burial was capped by 3 feet of apparently undisturbed refuse on the large Owasco culture station, situated on the south shore of the Seneca River, at Jack's Reef, Onondaga County, previously described on pages 83-86.

Plate 69. Artifacts from Cremated Burial
Jack's Reef Site
Point Peninsula Focus, Vine Valley Aspect

1, 3, curved-base platform pipes, with incised ornamentation; 2, conical pipe bowl, of clay; 4, straight-base platform pipe (end broken and reworked); 5, large, rough, tubular shell beads, from conch columella; 6-9, perforated shark teeth; 10-12, imperforate shark teeth; 13, flat antler gaming piece (?); 14, triangular projectile point; 15, conical antler projectile point; 16-18, multiple unilaterally barbed harpoons or projectile points; 19, 20, 22, 23, 27, 28, fragments of decorated antler combs; 21, 26, deer scapula scrapers; 24, 29, large cylindrical antler flakers; 25, 30-32, unworked (30 has cut base) antler fragments; 33, oval pebble whetstone.

Collection of Kenneth O. Palmer, Syracuse, New York.

Material: 1, 3, 4, steatite; 14, gray Onondaga chert; 33, sandstone.

Mr. Kenneth O. Palmer of Syracuse, who discovered it in the fall of 1938, states that the pit was oval in outline, 31 inches x 34 inches at its mouth, and that it penetrated the clay and gravel subsoil for 19 inches. A flat roundish boulder, some 18 inches across, partially covered the top. The grave contained an almost solid mass of charcoal, some in the form of sticks up to 2 1/2 inches in diameter (unfortunately not saved). Among the charcoal were small pieces of calcined bone, doubtless the remains of a human cremation, for one molar tooth was readily recognizable. Here, also, but especially at the bottom of the grave, were the artifacts pictured and described on Plate 69, plus 3 more massive beads like fig. 5, other portions of the 4 decorated combs (Plate 69, figs. 19, 20, 22, 23, 27, 28, and Plate 87, figs. 1, 4, 8), and fragments of "raw" bone and antler.

Evidently a flexed or more probably bundle burial, since the destruction was so nearly complete, surrounded by the rich panoply often lavished upon the dead of this culture, had been placed upon a pyre of sticks, through the interstices of which the smaller and heavier objects readily slipped to the bottom as the wood burned and thus escaped the damage inflicted upon the larger bone and antler pieces.

Pickins Component (Plate 53, site 8)

A few hundred yards southwest of the Robinson site, a major component of the Laurentian Aspect still to be described, on the eastern outskirts of the town of Brewerton, at the foot of Oneida Lake, Onondaga County, is the remnant of a large gravel knoll, much exploited more than 20 years ago for building material. During the course of this digging the workmen came upon a large deposit of red paint with associated objects and at various places near the north end, groups of artifacts, some of extraordinary character. Only a part of the finds were conserved, most of these being finally acquired by Mr. J. Elet Milton of Brewerton, who cordially assented to their study by the writer.

Tests on the remainder of the knoll, with the kind permission of the present owner, Mr. Arb Pickins of Syracuse, disclosed no further burials or artifacts. Many calcined bone fragments, several positively identified as human, were, however, gathered from the eroded surface of the old diggings and in the spoil heaps, and it is therefore reasonable to assume the former presence here of a cemetery like that situated across the river and next to be described.

Reference to Plate 70 will make clear the nature of the artifacts unearthed. The thin cache blades illustrated (figs. 1-21, 22, 27-30, 32-38) are typical of the 170 in Mr. Milton's possession from the red paint deposit on this site, many being still covered with the pigment. Figs. 31 and 42 are representative of the 3 or 4 large thinly chipped spear or knife blades of exotic greenish chert, evidently broken or "killed" before burial, since the fracture planes are patinated, and figs. 43, 44 show portions of 3 large hoe-shaped tools made from the same stone. One at least was broken transversely before burial, the workmen's

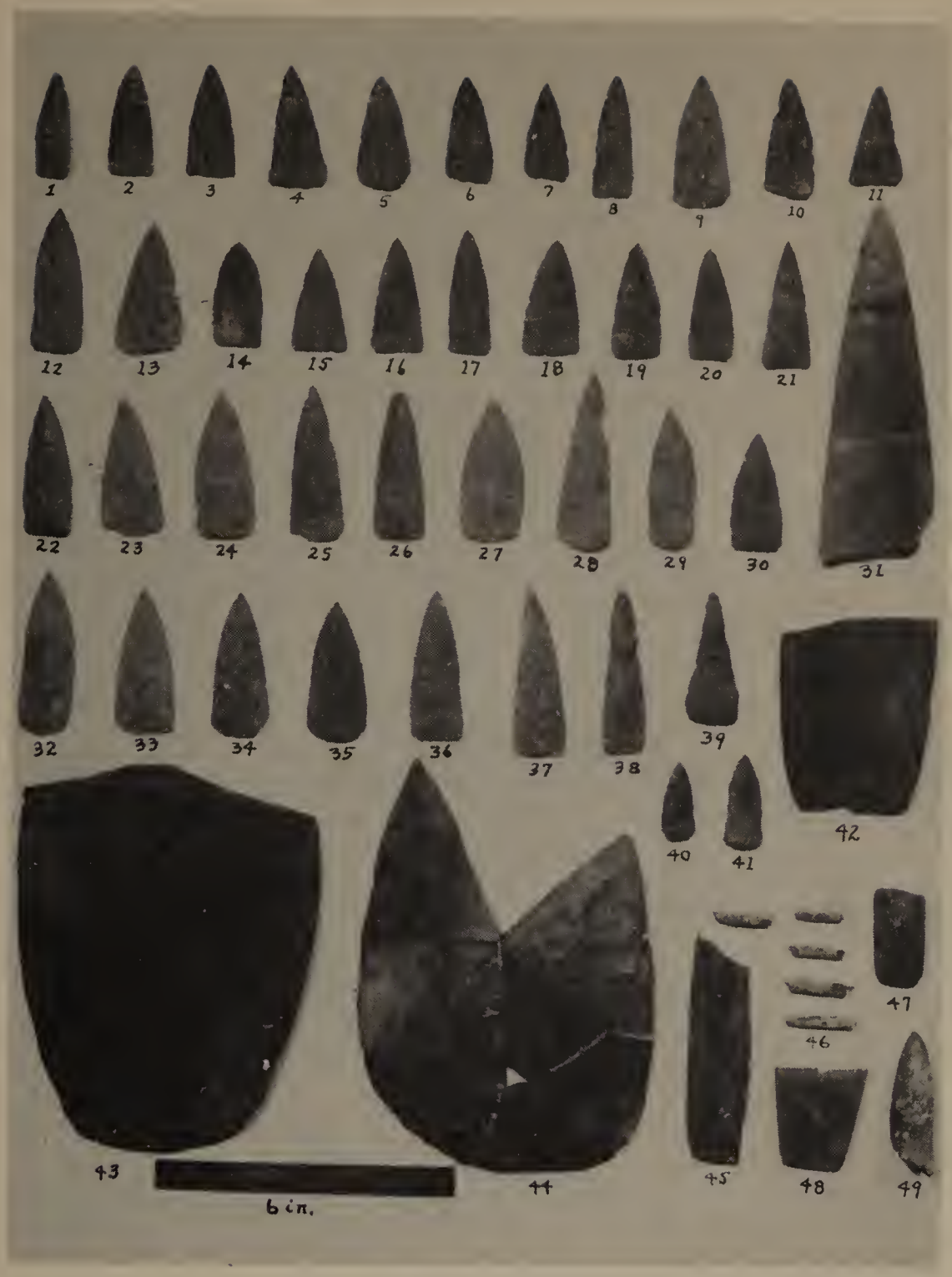

Plate 70.

Stone, Antler and Copper Artifacts
From Burials on the Pickins Site
Point Peninsula Focus, Vine Valley Aspect

1-30, 32-38, thin trianguloid cache blades; 31, 42, portions of large thin triangular spearpoints (?); 39-41, triangular end scrapers; 43, 44, portions of large hoe-shaped blades (maximum thickness 9/16"); 45, 48, fragmentary gorgets; 46, copper beads, made from thick, beaten sheet metal; 47, incomplete stone object, resembling a bar amulet, but imperforate; 49 antler club spike (?).

Figs. 31, 42, 45, 48 show old fracture planes; fig. 43 exhibits old transverse fracture and like 44, recent breakage by workmen's picks. Other parts not recovered.

Collection of J. Elet Milton, Brewerton, New York.

Material: 1-30, 32-41, gray Onondaga chert; 31, 42-44, greenish gray exotic chert; 45, 48, slate; 47, granite.

picks being responsible for the greater damage. Unhappily, the missing parts of these evidently unique artifacts, if present, were not secured by the finders.

Oberlander Component No. 2 (Plate 53, site 9)[1]

Almost due north across the Oneida River from the Pickins site is a similar nearly level-topped knoll on the Oberlander property,[2] where, in 1938, museum excavations uncovered 22 pits and an equal number of graves, all sunk in the tough clay-gravel comprising the hill.

Little need be said about the former, which were oval or circular structures, averaging about 4 feet in diameter and 26 inches in depth. They seemed, from the dark almost sterile contents, to have been cache pits, as, indeed, some of the graves may originally have been, and although scattered to some extent among the latter, the majority were grouped randomly near the south end. Such artifacts as were secured therefrom corresponded typologically with the grave goods; hence the contemporaneity of the two features may be accepted, and both related on the same basis of artifact resemblance to the nearby village component on the Vinette property, to be considered next.

A few generalities may be given about the burials before summaries of the most important are set down. All were cremations, single or multiple, evidently of bundled remains which may have been enclosed in leather shrouds, portions of which remained in one instance in the completely charred state. The pyre, a heap of sticks and small logs, had been reduced to charcoal among which occurred the calcined bones, unquestionably burned in situ, as was further proved by the fire-reddened walls of the grave pits. These round or oval structures, varied from a foot to 38 inches in depth (average 26 inches) and measured approximately 5 feet x 3 feet across the top. A peculiarity of several was the presence, in the bottom or close to the periphery, of a small circular pit, about 18 inches in diameter and a foot deep, holding only dark soil. A larger number of graves held 1 to 3 small boulders, evidently placed on or close to the floor.

The dead had been for the most part supplied with mortuary offerings, only 6 having no imperishable goods. Two had but one object, one 93, and the average was 12.5 artifacts to a burial. Usually the accompaniments had been grouped in small aggregates at one side of the grave, several in pockets in the wall, and had thus escaped destruction by fire. Some however, subjected to the heat, were much affected; the flints were shattered (Plate 71, figs. 20, 25) or their surface vitrified (Plate 71, fig. 16), the slate and other polished

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[1]Ritchie, 1938, pp. 223-225.

[2]Grateful acknowledgments are due the owners of this estate, Mr. Oscar Oberlander and Dr. Irving Oberlander of Syracuse, and Mrs. C. E. Nathaway of Rochester, for their cordial cooperation. To Mr. William Hafermalz of Brewerton, who leased the plot for garden use, thanks are also accorded.

Plate 71. Mortuary Goods from Cremated Burials
Oberlander Site, No. 2
Point Peninsula Focus, Vine Valley Aspect

1-4, 7-10, thin, triangulоid cache blades; 5, 6, 11, 12, 16, 25, thin, side-notched projectile points (surface of 16 has vitreous luster from heat); 13, side-notched spearpoint; 14, narrow rectanguloid gorget; 15, broad rectanguloid gorget; 17, 18, 26, triangular end scrapers; 19, drill, with expanded scraper-edge base; 20, drill, with expanded base; 21, copper awl; 22, tabular whetstone, with linear incisions on face; 23, limonite paintstone; 24, pebble hammerstone; 27, 28, reworked gorget fragments; 29, birdstone of broad, ridged-base, "pop-eye" type; 30, 31, rectanguloid celts; 32, sinewstone, ridge on opposite face is at right angles; 33, decomposed iron pyrites and 34, flint strike-a-light, found together (fire-making outfit) 35, unfinished birdstone, narrow type; 36, bone awl, from polished splinter, perforated base (completely restored from calcined fragments except for portion of base).

Material: 1-12, 16-20, 24-26, 34, gray and mottled gray and tan Onondaga chert; 13, bluish chalcedony; 14, 27-29, slate; 15, chlorite schist; 22, 23, 32, sandstone; 30, slate; 31, mica schist.

stone artifacts were cracked or broken (Plate 71, fig. 15), while the bone and antler objects were reduced to the same condition as the human bone (Plate 71, fig. 36).

Among the objects, whole or originally intact, there were now and again reworked or apparently broken and discarded pieces. Seemingly a fragment had been made to suffice for a whole (Plate 71, figs. 27, 28). Not infrequently, too, as in virtually all graves of this culture known to the writer, rough or partially prepared bone and antler sections occurred, evidently the raw material for implement manufacture in the other world.

Several burials were equipped with a well-diversified series of objects, including projectile points, knife blades, scrapers, drills, cache blades, celts, adzes, copper awls, hammerstones, anvilstones, whetstones, and fire-making sets which comprised a lump or two of iron pyrites and a chipped flint striker. In a few instances burned dog and deer bones could be identified among the human remains, suggesting the immolation of animal food and perhaps hunting dogs.

Representative examples of the material culture are given on Plate 71; the table on pages 354-366 lists the total traits discovered; and the following accounts, in some detail, are representative of the burial conditions.

Burial 2. This occupied an oval pit 10 feet x 6 feet, 2 feet deep near the edges and 30 inches deep at the center. Down to bone level (about 10 inches from bottom) the fill (except for the dark plowed topsoil cap over the knoll) consisted of a reddish soil, evidently the local clay-gravel loam partially oxidized by heat. This characteristic of many of the graves, together with the large amounts of charcoal or unconsumed wood, seems to show that filling began while the crematory fire still burned. Occasional calcined bone fragments, apparently brought up from below, were met with in the fill, together with chert chips, a side-notched point, the base of a stemmed point, 2 end scrapers, and a cache blade. These objects may have been intentionally or accidentally included, or like the bone fragments, brought up by rodent or root action.

The bone deposit and charcoal at the pit fundus were covered with numerous small boulders, pebbles, and fire-broken stones, while over the southeast side rested a large flat boulder. Although thoroughly calcined not all the human remains were fragmentary; 2 much fissured humeri, minus only the distal extremities, lay close together, heads reversed, beside a heap of skull sherds. Nearby, part of another humerus and skull occurred, embedded in much smaller bone bits and reddish bone ash. Next to this, in a heap at the side of a boulder, lay a long side-notched point broken into 6 pieces (Plate 71, fig. 25), a complete point of the same kind (Plate 71, fig. 12), a drill in three parts (Plate 71, fig. 20), an end scraper, copper awl, plano-convex adze, small chert hammerstone (Plate 71, fig. 24), and a smooth pebble.

From 3 separate points about the grave were recovered portions of a large shale gorget (Plate 71, fig. 15), near one an anvilstone,[1] 2 condylar pieces of deer bone, and a tine section.

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[1]This specimen, which also shows use as an abradingstone, is of special significance in being made from a weathered chopper fragment, probably picked up on the neighboring and older Oberlander site, number 1.

Plate 72.

Cremated Burial
Oberlander Site, No. 2
Point Peninsula Focus, Vine Valley Aspect

Section through approximate center of burial pit, showing small burned boulders and layer of calcined human bone (above number). Two groups of grave goods, including a bird-stone, were associated with this burial.

Maximum depth to center 3 feet 8 inches.

At the west end the chalcedony spearpoint, shown as fig. 13 (Plate 71), and 2 side-notched points (fig. 6, same plate) came to light. Elsewhere among the bone fragments were a retouched flake knife, rude end scraper, and cache blade fragment.

Burial 4. At either end of an oval grave 7 feet long, 39 inches in maximum breadth, 13 inches deep at the edge, and 18 inches at the center, a heap of cremated bones, about 4 inches thick, was found. Yellowish soil flecked with charcoal and carrying chert chips covered the remains, which were embedded in black earth and charcoal, some as sticks an inch across and 8 to 10 inches in length. Numerous fire-cracked stones were also present among the bones. The soil below was much reddened from thermal effects.

From the thickness of the skull sherds one would judge the burial at the eastern end, which had the larger number of grave goods scattered about among the fragments, to represent a male, the other a female. With the former occurred burned deer bones; a dog jaw; reworked gorget exhibiting secondary use as an abradingstone (Plate 71, fig. 27); triangular scraper (Plate 71, fig. 17); vitrified side-notched point (Plate 71, fig. 16); end scraper; 3 drills, broken or intact and all vitrified; point fragments; perforated bone awl (Plate 71, fig. 36); and fragmentary bone dagger, warped by burning.

With the western burial were several broken points, drills, scrapers and gorgets, with missing parts, a complete side-notched point, triangular scraper, limonite paintstone (Plate 71, fig. 23), and anvilstone. Although carefully sought, the wanting portions could not be found, making it probable that the objects were not complete when placed upon the pyre.

Burial 6. In a circular pit 45 inches in diameter and 40 inches in maximum depth (on the northwest side), burial 6 was located. Immediately below the plowline a mass of fire-broken stones was encountered which continued throughout the grave fill, diminishing in number toward the bottom. At the top, the stones occurred in a layer of fire-reddened soil resting upon black earth 23 inches deep. The latter derived its color from its high content of charcoal, which existed both in minute and large pieces. Gray ash covered the bottom and the steep pit sides were burned. Near the floor on the southwest side lay 3 stones, 8 to 10 inches in diameter, embedded in charcoal. While scattered bits of cremated human bone occurred throughout the grave fill, the concentration, consisting apparently of more than one adult skeleton, was found close to the bottom on the southern side (Plate 72). Intermingled were several animal bones, of which the femur of a dog was recognizable. Behind the bone mass, in the south wall and again in the east wall, close to bottom, a pocket or recess was exposed, harboring a cache of offerings. The first comprised 2 large triangular scrapers (Plate 71, fig. 26), 2 abradingstones (Plate 71, fig. 22), a celt (fig. 31, same plate), a fire-making outfit consisting of 2 nodules of iron pyrites[1] and 2 flint strikers (Plate 71, figs. 33, 34), a small triangular scraper (Plate 71, fig. 18), end scraper, side-notched point, fragments of 2 points and a gorget, 2 sections of flat eyed needles, portion of a slotted antler haft of a beaver incisor cutting tool, fragment of an unidentifiable antler object, and 8 pieces of bone awls, representing at least 4 implements. A few inches away lay a rim sherd of a steatite pot.

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[1]Decomposed into limonite, as is always the case with this unstable mineral.

Plate 73. Multiple Cremation
Oberlander Site, No. 2
Point Peninsula Focus, Vine Valley Aspect

Upper portion of cremation (white calcined bone fragments) uncovered near grave bottom; some removed (in cigar box). Arrows point to thin cache blades, of which 93 occurred in grave fill and about bones. Depth of level exposed 3 feet; depth to bottom 3 feet 3 inches.

The second offering comprised 4 side-notched points, one broken in half; an incomplete point; 2 drills, one with scraper base (Plate 71, fig. 19); a bone awl section; 2 portions of bone points with chisel edge; and what appeared to be a segment of a carbonized wooden bowl.

Elsewhere in the grave occurred a birdstone (Plate 71, fig. 29), resting on its base in the charcoal, 5 inches above the bottom and 10 inches from the northern wall; a drill; reworked gorget fragment; cache blade; and copper fragment. From the topsoil, not definitely associated with the burial, were recovered an end scraper and basal parts of a cache blade and stemmed point.

Attempting the reconstruction of this burial, one assumes that after mortuary offerings had been placed in the wall recesses near the bottom, a pyre of sticks and small logs was constructed, upon which were placed the human bones, possibly in a leather sack or wrapping (for remains of such came to light in grave 16), together with further objects, including animal bones or food, and the carcass or skeleton, partial or complete, of a dog. The heavy birdstone seems to have slipped quickly to the bottom as the heap burned, for it exhibited no effects of fire. Some of the stone articles (points, gorget, steatite potsherd) were doubtless incomplete at the time of burial and certain or all of the bone objects may also have been, although the likelihood of their partial destruction by the conflagration is perhaps greater. While the fire yet burned, the soil covering was applied. Seemingly, also, there was an intentional capping of broken stones.

Burial 14. Erosion of the knoll had subjected the top of this shallow burial to the plow, resulting in the destruction of part of its goods. It occupied an oval depression, 3 feet x 2 feet (the long axis, as in most cases, running east and west) and 15 inches deep. The south wall consisted of two boulders and as many rough slabs, evidently arranged artificially. Reddened earth surrounded the mixture of incinerated bones and charcoal, and the usual fire-fractured rocks, large and small, were in the fill. Also in the soil covering were a gorget fragment and a marked potsherd, similar to a number of others found about 2 feet south of the stone wall, in reddish disturbed earth, which also yielded the imperforate and evidently unfinished birdstone, pictured as fig. 35 of Plate 71. The relationship between burial 14 and this small intersecting pit is obscure.

Embraced among the bone fragments of the burial were several artifacts. A tubular pottery pipe, identical with the specimen from the West Rush site (Plate 54, fig. 52), standing vertically, had suffered damage by the plow; a drill, side-notched point fragment, and reworked gorget (Plate 71, fig. 28), located a few inches deeper, had escaped.

Burial 16. This remarkable burial occupied a nearly round pit, 44 inches across and 39 inches deep. Along the eastern and southern periphery, 19 inches from the surface, extended a shelf about 14 inches wide which was covered with cache blades. Entering the pit through the southwest wall was a sloping trench or ramp 3 feet in breadth and 18 inches in depth, which one may suppose was employed to facilitate the excavation of the grave. Two clusters of cache blades, 18 inches apart and containing respectively 5 and 9 specimens, were found on the trench floor.

Beneath the plow-zone occurred a reddish sandy loam grading downward into the dark grave soil, where at 3 feet a small cluster of calcined bones was encountered close

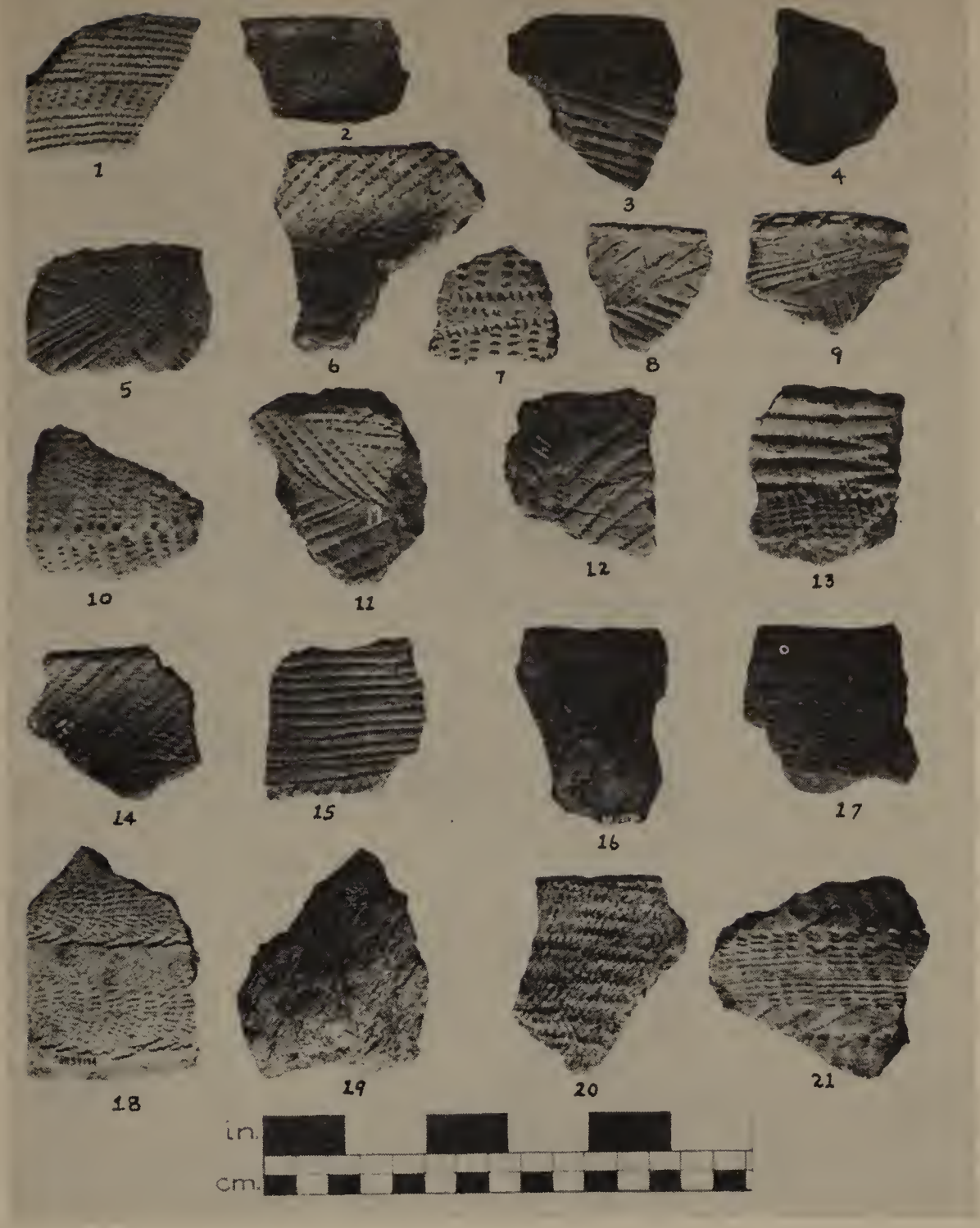


Plate 74.

Potsherds
From Midden on Vinette Site
Point Peninsula Focus, Vine Valley Aspect

All medium coarse to medium fine grit-or sand-tempered.

1, linear punctate pattern on curved wall fragment; 2, straight rim, dentate rocker-stamp design; 3, curved wall, broad impressed lines; 4, dentate rocker-stamp ornamentation on slightly curved side; 5, shoulder sherd showing constriction, linear dentate embellishment; 6, constricted neck, everted rim, herringbone design in rectangular dentates; 7, cord-wound-stick imprints on straight sherd; 8, mildly everted rim, punctate-executed herringbone design; 9, straight rim, sharply everted lip, linear punctate ornamentation; 10, curved side, rocker-stamp dentate work; 11, constricted neck sherd, dentate-stamp-impressed herringbone design; 12, straight wall, slightly curvilinear dentate ornamentation; 13, constricted neck, straight rim, bold rectangular dentate-stamp imprints; 14, everted rim sherd, linear punctate embellishment; 15, fine linear dentates on straight wall fragment; 16, straight rim sherd, partially smoothed over fabric- or cord-roughened surface; 17, straight rim sherd, cord-wound-stick (?) decoration; 18, slightly curved wall, curvilinear toothed rocker-stamp decoration, fracture along coil plane evident on lower edge; 19, cord-roughened curved side fragment; 20, straight rim, fabric-malleated surface; 21, curved wall piece, dentate rocker-stamp ornamentation.

Interiors of figs. 6, 8, 11, 14, 17, decorated; 16, 20, roughened like exterior; 5, 7, 10, 12, 19, channeled; others plain and smooth.

above what resembled the undisturbed subsoil base. A gray ash streak along the northwest side, however, led to further exploration, and 4 inches lower was revealed a dense deposit of charcoal with random broken stones and scattered bone bits; also two concentrated masses of bone, one evidently representing an adult female and child, the other a large adult male (Plate 73). Beneath the compact masses were found small patches of thin charred bark, and large and thick pieces of a spongy substance identified as burned leather. About the bone clusters, but especially around the floor periphery, were cache blades, some (near the center) fire-damaged. In toto, this burial produced no fewer than 93 such artifacts (Plate 71, figs. 1-4, 7-10), scattered from top to bottom in the grave, mainly about the edges, and also on the shelf and trench floor.

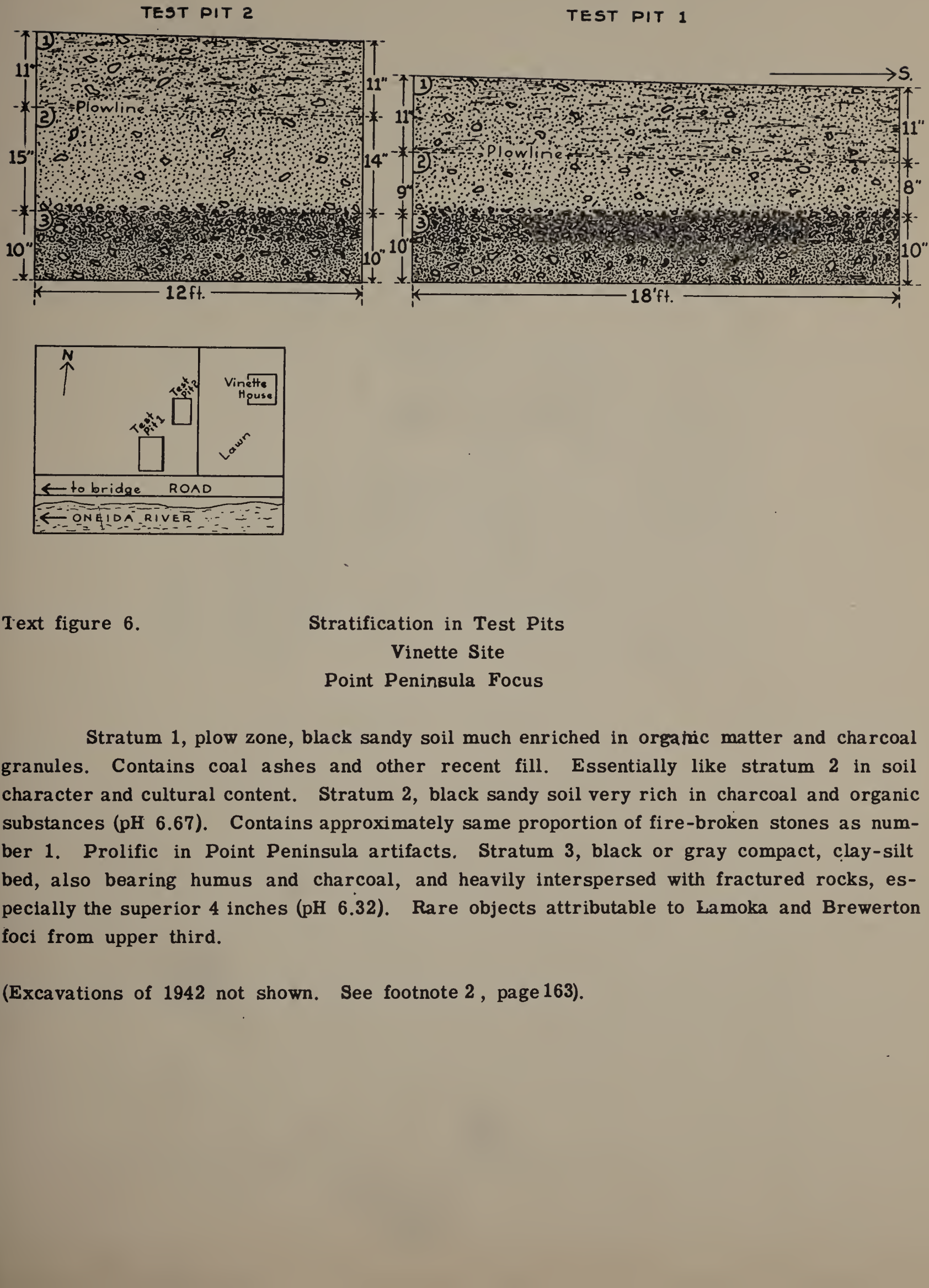
Interpretation of the data apparently affords the following reconstruction. A deep grave pit, dug with the help of a trench, was either lined about the bottom with bark and hides, or the two bone bundles cremated there were so wrapped. (Due to the proximity of the masses to the wall, where the carbonized organic matter occurred, this important point could not definitely be established, but the latter alternative seems the more probable.) After the flames had subsided, as is shown by the top layer of ash, a partial covering of the removed subsoil was thrown in. Upon a thin stratum of dark soil investing this a small cremation took place, the heat therefrom discoloring the superincumbent fill.

While many cache blades accompanied the lower remains, others had been sporadically placed, chiefly around the walls, during the process of covering both burials.

Vinette Component (Plate 53, site 9)

About 1,000 feet southwest of the Oberlander station, number 2 and approximately the same distance due west of number 1, is situated the Vinette site. It occupies the low level land bordering the north shore of the Oneida River. Its precise limits are impossible to define, inasmuch as extensive digging is prohibited by cottage lawns, but tests show it to extend at least 150 feet along the river and 60 feet back therefrom. Clearly it was an extensive and important settlement on the rifts of the now canalized river, and there is every reason to conclude, from the typological identity of the artifacts, that the cemetery of cremated burials on the nearby knoll, just described (Oberlander site, number 2), is the burial place of the inhabitants of this shore village.

In 1938 and again in 1940, with the kind consent of Mr. J. A. Vinette, large test pits were sunk in his garden plot, just east of his house. The south end of test pit 2 (6 x 12 feet) lay only some 10 feet diagonally east of the north end of the first and larger (10 x 18 feet), and identical stratigraphy, except for depth of the middle member, occurred in both (see text fig. 6). The sections, 30 and 36 inches deep, respectively, exhibited three distinct zones, the upper two physically and culturally related, in fact, differentiated only in that number 1 constituted the plow zone, deepened by the gradual accumulation of coal ashes and



Text figure 6. Stratification in Test Pits
Vinette Site
Point Peninsula Focus

Stratum 1, plow zone, black sandy soil much enriched in organic matter and charcoal granules. Contains coal ashes and other recent fill. Essentially like stratum 2 in soil character and cultural content. Stratum 2, black sandy soil very rich in charcoal and organic substances (pH 6.67). Contains approximately same proportion of fire-broken stones as number 1. Prolific in Point Peninsula artifacts. Stratum 3, black or gray compact, clay-silt bed, also bearing humus and charcoal, and heavily interspersed with fractured rocks, especially the superior 4 inches (pH 6.32). Rare objects attributable to Lamoka and Brewerton foci from upper third.

(Excavations of 1942 not shown. See footnote 2, page 163).

Plate 75. Stone, Bone and Copper Artifacts
From Midden on Vinette Site
Point Peninsula Focus, Vine Valley Aspect

1, basal segment of narrow stemmed point; 2, broad, thin, stemmed point; 3, narrow, side-notched point, weathered, perhaps derived from older culture; 4-7, broad, thin, side-notched points (7 has expanded base); 8-10, broad, thick, side-notched points; 11-13, semi-lozenge-shaped points; 14, triangular point, with straight base; 15, basal fragment of broad (?) point, with triangular pointed tang (so-called "turkey tail" type); 16, flake knife, edge retouched; 17, thick, retouched, prismatic flake knife; 18, thin, prismatic flake knife; 19, broad triangular knife; 20, 21, narrow triangular knives, very thin; 22, 23, ovate end scrapers (23 is double-ended); 24, 25, trianguloid end scrapers (from flake chipped on one face only); 26-29, triangular end scrapers (chipped on both faces, 28, 29, are not exceptionally long for this culture); 30, 31, stemmed end scrapers; 32, side scraper, from retouched flake; 33, drill, based on rough spall; 34, drill, with expanded rectanguloid base; 35, drill, with expanded side-notched base; 36, 37, drills, with expanded side-notched base and very short point; 38, drill, with expanded, scraper-edge base; 39, semilozenge-shaped point, end battered blunt, perhaps for use as strike-a-light; 40, chipped celt; 41, rectanguloid plano-convex adze; 42, 43, gorget fragments; 44, 45, ground and smoothed, thin, rectangular pieces of shale, fragmentary, use unknown; 46, 47, unpitted pebble hammerstones; 48, muller, worked on both faces; 49, tabular whetstone; 50, bola-stone (grooved entirely around long axis); 51, oval pebble, ends grooved; 52, flat, notched, pebble netsinker; 53, phallic effigy (upper end has short vertical incision, not shown in photograph), used as a hammerstone (lower end well battered); 54, 55, rim sherds of steatite pots (54 is notched); 56, copper awl; 57, point fragment of calcined bone awl; 58, small rubbed piece of graphite (paintstone); 59, fragmentary beveled adze; 60, broad, thick, stemmed point; 61, small celt or scraper (59-61 from upper third of stratum 3, test pit 2, see Text fig. 6).

Material: All chipped objects of gray Onondaga chert, except 18, of chalcedony and 22 and 24, of red and yellow jasper, respectively. 40, 43, 46, 48, 49, 52, 53, sandstone; 41 slate; 42, 44, 45, shale; 47, andesite; 50, granite; 51, mica schist; 59, ?; 61, phyllite.

other recent refuse, and largely denuded of its artifact content by the activities of surface collectors. Stratum 2, 9 and 15 inches deep, in the two test pits, respectively, consisted of black sand deriving its color from a heavy admixture of charcoal and other organic material. Except near the base, it contained only a light sprinkling of fire-broken stones, but it was richly productive of potsherds, and to a lesser extent yielded stone artifacts but, due to its acidity (pH 6.67),[1] no refuse or implements of bone, save as calcined fragments.

Below the heavy concentration of cracked stones extended stratum 3, a compact, gray or black, clay and clay-silt bed, of undetermined depth (continuous at 6 feet). Throughout its upper or relic-bearing portion, fire-broken stones in diminishing numbers continued to be met with and, in fact, to this stratum the stone band just mentioned seemed to pertain, since it was mostly enveloped in the clay. While cord-malleated potsherds, of type 1, presently to be described, occasionally lay among the stones in the top of layer 3, not a single ceramic fragment was unearthed within it. Stratum 3 did, however, produce from its upper eight inches, 2 beveled adzes (Plate 75, fig. 59), a small celt (Plate 75, fig. 61), a thick, stemmed point (Plate 75, fig. 60), and fragments of others of unidentifiable type.[2]

Representative examples of the stone and pottery constituents of the middle layer[3] are depicted on Plates 74 and 75. The category comprises the same preponderance of thin

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[1]Determined by Professor A. F. Gustafson, Cornell University.

[2]In the summer of 1942, Mr. Vinette kindly permitted further excavations to be made, this time just outside the now planted garden plot along the western border of the cottage lawn. Three test pits, uniformly 5 feet 6 inches wide, were run lineally northward, beginning 6 feet from the road. The first two, 6 feet and 11 feet 6 inches long, respectively, were practically continuous; a 5 foot 6 inch interval to avoid a buried pipe line, separated these from the somewhat larger third pit (11 feet, 10 inches in length). The stratigraphy encountered was identical with that described, and the depths of the several layers did not vary more than a few inches from the measurements given for pits 1 and 2. Furthermore, the general conditions were also identical, excepting for the presence of several small fairly well preserved masses of fish bone, derived largely from the bullhead, which were uncovered in the upper 5 inches of stratum 2 in the first excavation. The associated potsherds and stone implements did not deviate in type, and, in fact, there are no significant additions to the trait inventory (listed on pages 354-366), established by previous investigations of the site.

However, the new work strongly confirmed the previous results, e.g.: the two ceramic styles occurred in the same overlapping vertical relationship; the stone congeries was definitely shown to be uniform down to the upper surface of the broken-stone layer (top of stratum 3), where, in fact, in one small area a gorget fragment, 4 thin cache blades, several thin side-notched points, 4 steatite vessel fragments, and 2 sherds of style 1 pottery (cord-marked on both surfaces) occurred in close proximity; and further evidence of the underlying archaic occupation came to light with the finding, in the non-ceramic gray river silt below the concentration of shattered stones, 30 to 32 inches from the surface, of 5 narrow-bladed stemmed arrowpoints, typical of the Lamoka Focus.

[3]Although palpably of the same occupation, material from stratum 1, the "zone of doubt," is omitted from consideration.

side-notched points (Plate 75, figs. 4-7), thin triangular blades (mainly narrower and evidently knives fashioned, like the points and scrapers, from the type of cache blade found with the burials; compare Plate 75, figs. 19-21 with Plate 71, figs. 1-4, 7-10), triangular end scrapers (Plate 75, figs. 26-29), gorgets (Plate 75, figs. 42, 43), steatite and clay potsherds (Plates 75, figs. 54, 55; 74), to mention only the most salient, which were recovered as grave goods or, in the case of vessel sherds, as grave fill inclusions and in the probable cache pits, on the not distant knoll (compare with Plate 71).

While no stylistic distinction prevails in the stone work throughout stratum 2, a notable qualitative difference exists in the distribution of the ceramic fabrics within this zone. To begin with, the large numbers of sherds are derived from 2 readily distinguishable types of pots, as follows: (1) a coarse to medium grit-tempered, gray to black, or occasionally gray-brown or buff, straight-sided, pointed-bottomed form, cord- (in some cases probably fabric-) roughened over both entire surfaces (Plate 74, figs. 16, 20) (total, 785 sherds),[1] and (2) medium to medium fine grit, sand and grit, or sand-tempered, brown, buff, or terra-cotta ware from pots with straight sides (rarely) or somewhat constricted necks, straight to mildly everted rims and pointed bases, ornamented with rectilinear dentate work in various simple patterns, mainly rocker-stamp (Plate 74, figs. 1-15, 18, 21), or in a few examples, punctate or broadly incised decorations (total, 350 sherds).[2] From the correspondence in color and distribution, both the body sherds, which are cord-marked on the exterior only and, like the rims of type 2, often channeled on the interior surface (Plate 74, fig. 19) (total, 175 sherds),[3] and the rarer plain sherds (fairly smooth on both sides) belong to type 2 vessels. Beyond doubt, however, these type 2 vessels were extensively decorated over the body as well as the shoulder and rim.

Distributional studies show that there was found in the upper third of stratum 2, 82% of type 2 pottery and 70% of cord-marked on outside and plain ware, but only 8% of type 1 ware; in the middle third of this same stratum occurred 16% of type 2 ware, 20% of cord-marked on outside and plain ware, and 18% of type 1 ware; while the lower third of the stratum produced only 2% of type 2 ware, 10% of plain and cord-roughened-exterior ware, and 74% of type 1 ceramics.[4] Thus while the two styles coexist, type 2 becomes predominant over type 1 during the tenure of occupation of the site.

It is very important to note that type 1 ware and a generic variant of type 2 were present in the upper levels of both the Robinson and the Oberlander site, number 1 (see Plate 114), where they were interpreted as a late introduced element of the Brewerton Focus complex. Type 2 ware is beyond cavil the same as that found in the grave fill and pits of a supposedly Point Peninsula camp site on Long Point, Jefferson County (pages 166-173); also, it bears a close resemblance to ware present on many camp sites along and on the islands

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[1]This number was more than doubled by the excavations of 1942.

[2]Nearly 1,000 additional examples were found in 1942.

[3]This figure, too, has been considerably increased.

[4]Statistical analysis has not yet been made of the 1942 material, but inspection confirms the same trend of distribution.

Plate 76. Stone, Bone and Shell Artifacts
From Burials on Point Peninsula Site
Point Peninsula Focus, Vine Valley Aspect

1, harpoon fragment, with multiple unilateral barbs; 2, 17, harpoons, with multiple unilateral barbs and line hole; 3, 4, harpoons or projectile points, with multiple unilateral barbs; 5, 6, harpoons or projectile points, with multiple bilateral barbs; 7-11, gorges, made from bone splinters (8 is an aberrant form and may be the barb of a compound fishhook); 12, harpoon or projectile point, with single unilateral barb; 13, antler haft, slotted for two beaver incisors; 14, gorges or fishhook points (compound type), from pectoral spines of catfish (?); 15, Marginella (top) and tubular shell beads (conch columella); 16, multiple bilaterally barbed harpoon; 18, 19, antler club spikes (?); 20, bone dagger hilt, with incised triangle design and serrated edge; 21, section of thin, perforated bone needle; 22, rough splinter awl; 23, small, cylindrical, antler flaking tool; 24, large, cylindrical antler flaking tool; 25, knife, from long bone section, with sharpened rounded end; 26, bird bone tube, large end serrated, small end perforated through one wall; 27, worked piece of antler; 28, polished splinter awl; 29, base of large triangular point; 30, thin, trianguloid cache blade; 31, 33, 35, 36, triangular projectile points, concave base; 32, triangular projectile point, angular edges; 34, 38, 39, thin, side-notched projectile points; 37, triangular projectile point, straight base; 40, perforated shark tooth; 41, deer ulna awl; 42, bone dagger, triangular in section, with basal perforation; 43, tabular whetstone, with abraded surface; 44, plano-convex adze; 45, rectanguloid celt; 46, rectanguloid pendant (broken and redrilled); 47, small plano-convex adze blade; 48, curved-base platform pipe.

Collection of John B. Nichols, Cape Vincent, New York.

Material of stone objects; 29-39 gray Onondaga chert; 43, sandstone; 44, 45, a compact igneous rock; 46, slate; 47, nephrite; 48, steatite.

of the St. Lawrence River from its source at least to Long Sault Island (north of Massena, St. Lawrence County), where the writer found it in pits, one of which held a cremated burial associated with a triangular arrowpoint. While the generic relationship of type 2 ware with the Woodland fictile fabrics of the Great Lakes area is readily demonstrated, specific affinites with other cultures cannot yet be drawn. Griffin, however, sees striking parallels, especially in the rocker-stamp design, with Illinois Hopewell ware.[1] Type 1 ware manifests strong resemblances in form and surface treatment, but is thinner and finer than the pottery from New York Hopewellian mounds, still to be described.

From the character of the deposits and nature of the industrial remains on the Vinette station, it appears probable to the writer that the underlying level (stratum 3) represents intermittent occupation during archaic times of a shore camp sufficiently close to the water's edge for periodic inundation which laid down the clay and silt and tended to concentrate the boiling (?) stones of its relic-bearing portion. Subsequently, on a somewhat higher beach, which seems from its typological stratification of pottery to have developed by the accretion of sanded floors,[2] rather than by sheet wash from the flanking sand terrace paralleling the river some 500 feet behind (north of) the site, people of the early Point Peninsula culture maintained a sizable settlement, perhaps seasonally, over a considerable number of years, utilizing for their cemetery the knoll to the northeast, which we have termed the Oberlander site, number 2.

Point Peninsula Component (Plate 53, site 10)[3]

Since this was the first excavated component to yield a satisfactory amount of deterministic data, its name has been given to the culture.[4] The find was made in 1921 by Mr. John B. Nichols of Cape Vincent, New York, while investigating the archaeological possibilities of a singular limestone knoll, lightly earth covered, approximately 160 feet long, 100 feet wide, and 12 feet high, situated on the level terrain of the east side of Point Peninsula, a large land mass jutting into the foot of Lake Ontario from Jefferson County.

In slab-covered crevices of this much weathered erosional remnant, Mr. Nichols came upon 6 flexed burials (2 multiple) and an ossuary of 10 bundle interments, totaling the remains of 20 individuals, accompanied in the main by grave goods of types illustrated on Plate 76. The writer is extremely grateful to Mr. Nichols for many courtesies, including the privilege of making this photograph.

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[1] After examination of the Vinette material on May 3, 1941.

[2] See a discussion of this subject in Ritchie, 1940, pp. 8-9.

[3] Nichols, 1928.

[4] Ritchie, 1937a, pp. 188-193.

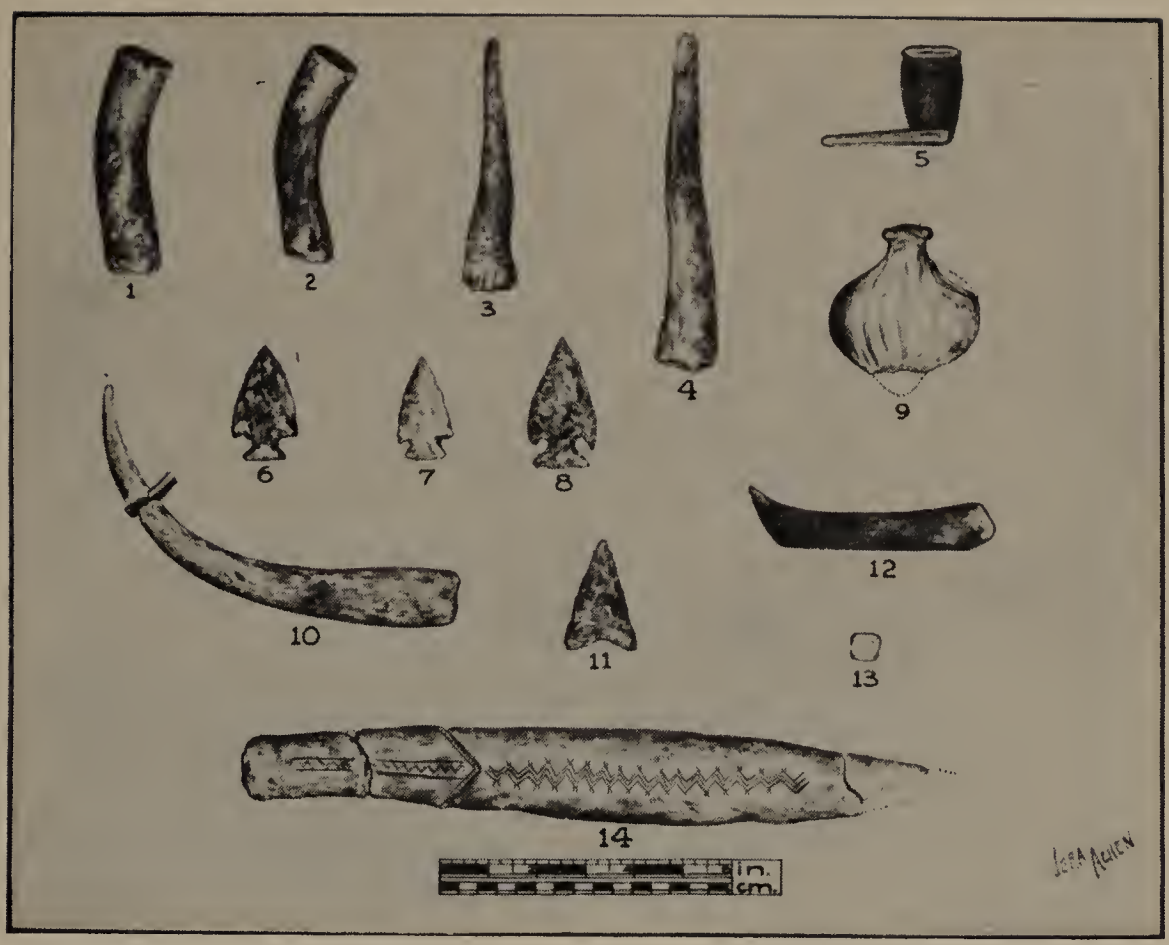

Plate 77. Artifacts from Ossuary
Northrop Site
Point Peninsula Focus, Vine Valley Aspect

A small part of the mortuary furnishings found with this multiple bundle burial. Remainder subsequently lost. 1, 2, large, cylindrical, antler tool handles (?); 3, 4, antler wedges or chisels; 5, pipe; 6-8, corner-notched projectile points; 9, birdstone, of broad, ridged-base, "pop-eyed" type; 10, hafted beaver incisor; 11, triangular projectile point; 12, birdstone, of narrow type, head broken off and end reworked; 13, short tubular bead, from conch columella; 14, hilted bone dagger, slightly curved in section, from large mammal long bone, with incised ornamentation (intact when found).

Collection of Benjamin Northrop, Chaumont, New York.

Drawing from photograph made by the writer.

Material: 5, steatite; 6-8, 11, gray Onondaga chert; 9, slate; 12, sandstone.

Although stained soil producing refuse bone, chert chips, and broken implements occurred in the fill of the burials, and a circular depression some 10 feet across, thought to be a lodge site, was observed, no potsherds came to light. Search for the habitation area proved fruitless, the thin refuse deposit about 100 rods northeast, largely covered by farm buildings, yielding projectile points of a different character, attributable to our recently defined Laurentian Aspect.

Probably referable to the Point Peninsula occupation, however, is a unique platform type of pipe of brown steatite, about 6 inches long, in the effigy of a flying squirrel, which was picked up near the knoll and is now in the museum of the Jefferson County Historical Society at Watertown.

Other remains on Point Peninsula which may also be referable to the culture, although perhaps not contemporaneous with the knoll burials, comprise 3 ossuaries and several graves and refuse pits found about a quarter mile north, at the head of Long Bay, also on Pt. Peninsula. On the west side of the brook emptying into this small bay, Mr. Nichols, beginning in 1922, uncovered the ossuaries, two of which he describes as follows in his report:[1]

"Ossuary 1. This ossuary was 12 feet long and 7 feet wide and 2 feet 9 inches deep at its deepest part. The sides were formed in part by natural rock and slabs of limestone, set up edgewise. The top was covered by small flat stones with 9 inches of soil under them. The pit to the bottom was filled with bones of men, women and children, also animal and bird bones. Some of the animal bones identified were bear, deer, elk, beaver, raccoon, woodchuck, muskrat and squirrel. Among the birds were wild turkey, partridge, shell-drake and loon.

"As nearly as I could determine there were 20 skeletons in a disassociated condition, and two had evidently been in a fire. As the skeletons were scattered and confused, I think there had been an aerial burial previous to the deposit in the pit.

"The artifacts recovered were 2 stone pipes, 1 ball [concretion] with a face carved upon it, 1 human effigy carved from a fossil [natural concretion], 7 [tubular] shell beads, 2 3/4 inches long and a half inch in diameter, 1 [tubular] bone bead 1 flint scraper, 1 rubbing stone, 1 small [discoidal] shell bead and 4 small marine shell beads" [Marginella].

"Ossuary 2. The second ossuary was smaller than the first and was found in a rock crevice, the ends of which had been closed with slabs of rock, making a pit 5 feet long, 2 feet wide, and 3 feet deep. The remains of 5 skeletons were found, three of which had been burned, for the bones were broken and blackened. As in the former ossuary I believe that this was the final episode of an aerial burial, the bones being recovered from the ground, from the scaffold or tree wrappings and deposited in the crevice. The only artifact was 1 stone chisel.

"Since opening this last ossuary I have discovered the remains of a large fire bed within 50 feet of the pits. This fire bed measured 8 feet in diameter and in the ashes are many remains of human and animal bones. The question arises whether or not this may have been a place where some of the bodies were cremated before deposit. If so it adds another interesting speculation concerning the customs of these forgotten people."

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[1]Nichols, 1928, pp. 70-71.

Plate. I

Plate 78.

Stone and Pottery Pipes
From Adult Male Burial, Port Maitland Site
Point Peninsula Focus, Vine Valley Aspect
Length of platform pipe 8 19/32 inches

1, two views of incomplete pottery pipe, with bowl joining stem nearly at right angle; 2, three views of straight-base platform pipe of greenish black steatite, with ridged stem.
Photograph by P. M. Pringle, Toronto, Canada.
Collection of Ralph W. Schooley, Humberstone, Ontario.

The third ossuary, found since publication, was not more than 15 feet from the second. Also occupying a wide natural crevice, it was nearly circular, with a diameter of some 8 feet and depth of about 2 feet. Slabs on edge surrounded all but one side where the natural rock formed the wall. Small flat stones and one heavy slab (over 500 lbs.) covered the bones, which reposed under a few inches of unstained soil, probably washed in. The much broken, partially cremated remains of at least 22 individuals (computed from the mandibles) occupied the rude vault. A small celt, atop the heap, comprised the sole offering.

On the rocky point across the brook mouth from the ossuaries, a single flexed adult male burial, in a grave marked by a sunken top and vertically protruding stones was found by Messrs. Nichols, Curtice M. Aldridge, and the writer in 1933. The skeleton lay upon bedrock, 16 inches from the surface, and was covered with two layers of large slabs. From the mouth protruded a small nephrite[1] celt, and a large antler spearpoint (?) broken at the base, rested upon the right tibia. Small fabric-impressed potsherds and chert chips occurred in the soil between the superincumbent slabs.

Some 800 feet upstream on the same (east) side of the gully, several pits and 2 burials were found. Two of the former, 66 inches in diameter and 6 feet deep, and 41 inches x 3 feet, respectively, held the usual dark soil with much charcoal at the bottom and nearly 200 small dentate-stamped or fabric-impressed potsherds. One of the burials was much decayed and of little consequence; the other, a multiple inhumation, occupied a grave fossa 4 feet in diameter and 21 inches deep, lined with small upright limestone slabs and floored with large pebbles about the size of an orange.

Above the flooring, in dark fill, were the bundled remains of two adults, evidently male and female, placed nearly together, but lacking the vertebrae and mandibles, although certain of the bones of the extremities were present. In the fill, but seemingly not grave goods, were about 20 dentate-rocker-stamped potsherds, derived from several vessels, a fragmentary gorget, multiple unilaterally barbed harpoon fragment, triangular chert point, worked beaver incisor, chert chips, and several pieces of bone.

Below the stone flooring lay the flexed skeleton of an adult male, headed north and facing west. Above and behind the skull lay the following objects: 2 triangular chert points, a plano-convex adze, slate celt or chisel, 2 graphite and one limonite paintstones, a small steatite blank for a platform pipe,[2] 2 partially worked antler tines, several chert chips, "raw" bone fragments, and a porcupine mandible. Among the bones occurred several rocker-stamped potsherds, identical in character with those from the fill above, from the neighboring pits, and from the Vinette site, already described (Plate 74).

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[1]Expert examination shows this to be indeed nephrite, an exotic rock used also by the Intrusive Mound people of Ohio. The small specimen (Plate 76, fig. 47) from the knoll, was declared nephrite by the late Dr. G. F. Kunz of the American Museum of Natural History.

[2]A complete article of this kind, a miniature platform pipe, similar to the specimen found in the Geneseo mound (Plate 106, fig. 34), was later dug out of a pit on this site by Mr. Nichols.

Plate 79.

Antler and Shell Artifacts
From Adult Male Burial, Port Maitland Site
Point Peninsula Focus, Vine Valley Aspect
Length of comb is 10 1/8 inches

1, engraved antler comb; 2, tooth of another large comb; 3, long tubular shell beads, from conch columella; 4, 5, conical antler arrowpoints; 6, large antler flaking tool; 7, unmodified tine of deer antler.

Photograph by P. M. Pringle, Toronto, Canada.
Collection of Ralph W. Schooley, Humberstone, Ontario.

Plate 80. Stone Artifacts
From Adult Male Burial, Port Maitland Site
Point Peninsula Focus, Vine Valley Aspect
Length of fig. 2 is 5 1/4 inches

1, triangular spearpoint; 2, trianguloid pendant of striped slate; 3, whetstone with abraded surface and weak grooves on edge; 4, drill, based on rough spall; 5, 6, rude, thick cache blades.

Photograph by P. M. Pringle, Toronto, Canada.

Collection of Ralph W. Schooley, Humberstone, Ontario.

Material: 1, exotic black chert; 4-6, local mottled Onondaga chert; 2, slate; 3, sandstone.

These burials seem therefore related, and typological considerations suggest the inclusion of the remains in the culture under discussion.

Northrop Component (Plate 53, site 11)

On the southwest arm of Chaumont Bay, which is enclosed by Pt. Peninsula, and just north of the isthmus uniting the latter with the mainland, is a tiny cove, at the head of which a natural mound-like knoll, about 30 feet across, rises sharply from the surrounding field, the property of Mr. Benjamin Northrop. In 1903 Mr. Northrop and his brothers opened upon the summit of this eminence a large grave, approximately 8 feet long, 6 feet wide, and 4 feet deep, covered with boulders and limestone slabs, some protruding through the sod. Upon the bottom reposed at least 8 skeletons, probably bundle burials, two of which are said to have had a small traumatic opening upon the vault of the skull. One salvaged parietal fragment in the museum's possession does, indeed, bear such a lesion, palpably inflicted by a club blow which had depressed the outer table over an oval area an inch in diameter, broken away a piece half this size within the depression, and completely detached about one and one-half inches of the inner table.

Of the host of associated objects, originally sufficiently numerous to fill completely a large milk pan, as stated by Mr. Nichols, only very few remain in the possession of Mr. Northrop, the others having been lost. The most remarkable is an ornamented bone dagger, 15 inches in length and 3 inches in breadth (Plate 77, fig. 14), intact when found. What is surely the hilt of such a dagger is illustrated on Plate 76, fig. 20, from the knoll on Point Peninsula, a few miles distant. Two forms of the birdstone, one broad, with ridged base and protruding "eyes" (Plate 77, fig. 9), the other a narrow bar type, minus the head (Plate 77, fig. 12), both having counterparts from the Oberlander burials (Plate 71, figs. 29, 35), were present, and there were 2 pipes, one a straight-base platform type of red slate, sketched by the writer on his first visit[1] but no longer in the collection when the photograph for Plate 77 was made in 1938, and the example illustrated as fig. 5, of Plate 77. Many large antler tools, possibly handles for beaver teeth, since the remaining few are socketed (Plate 77, figs. 1, 2) occurred, together with the following: antler wedges or chisels (Plate 77, figs. 3, 4); several hafted beaver incisors (Plate 77, fig. 10); a large number of perforated bear (?) and dog (?) teeth, all lost; hundreds of Marginella shell beads; numerous tubular beads made from conch columellae (Plate 77, fig. 13); 2 "cones" ground from fossil coral (tetracoralla), also lost; and approximately 90 knives and projectile points, thin and well formed, of which but a few remain (Plate 77, figs. 6-8, 11). When first seen by the writer there were in addition to the types illustrated, 3 corner-notched points of light non-regional chert, with angular edges, forming a pentagonal outline with the base.

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[1] See Fig. 8, 6 of Ritchie, 1937a, for an illustration of this pipe.

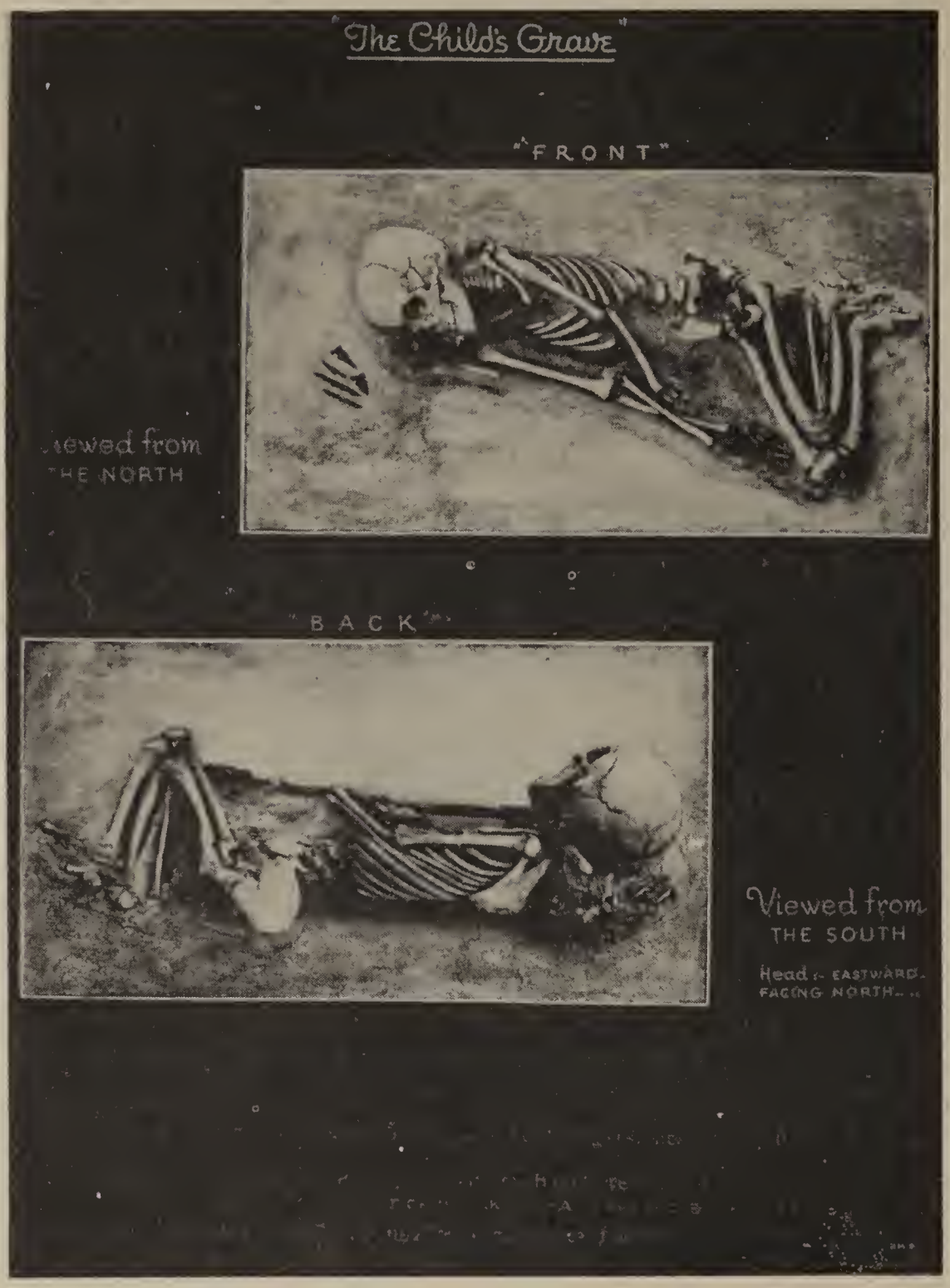

Plate 81.

Flexed Child Burial
Port Maitland Site
Point Peninsula Focus, Vine Valley Aspect

Cluster of grave goods in front of skull and beneath occiput.
Photograph by P. M. Pringle, Toronto, Ontario.

It is extremely regrettable that a fuller account cannot be given of this impressive find, for a complete inventory of its contents would probably link more intimately the complicated fragments of the Point Peninsula picture.[1]

Muskalonge Lake Component (Plate 43, site 12)

Upon the high sandy ridge between Muskalonge Lake (Jefferson County) and the Indian River, close to the foot of the former, some sixth of a mile northwest of its outlet into the river, the Messrs. George and Charles Scheeley, whose farm is on nearby Red Lake, noticed, in 1930, a slight eminence covered with fire-broken stones. Upon digging through these they reached, close to the surface, the top of a solid mass of red paint, estimated at more than a bushel in volume, within which, solidly packed together, were over 2,000 thin trianguloid cache blades, identical in type and material with those previously mentioned from several Pt. Peninsula sites. Their hasty search failed to find a gorget and copper celt, reported to have been taken out by a Watertown collector somewhat later. Subsequent investigations by Mr. John Carter of Clayton, New York and the writer, revealed overlooked examples of cache blades in the paint-stained sand, a rolled copper bead, and fragments of calcined bone, suspected to be of human origin.

Apparently this was a crematory pit similar to those at Brewerton, with an exceptionally large offering of blades and paint.

The writer has fragmentary notes on several other such discoveries, one made about 1880 by the late Mr. George H. Harris of Rochester, on the high sand terrace at Point Pleasant, overlooking Irondequoit Bay, Monroe County.

Approximately 150 blades of the same kind, embedded in red ochre, occurred in this cache, most of which, still paint coated, are now in the museum.

There is no mention in the brief catalog notation on the specimens of the presence of bone, but very likely any calcined fragments would have been overlooked, or if noticed, uninterpreted.

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[1]Beauchamp (1905b, p. 28) states that "a perfect clay vessel was also destroyed by the diggers." If this be true, it is the only instance of pottery as Point Peninsula mortuary goods known to the writer.

Plate 82. Bone and Antler Implements
From Child Burial, Port Maitland Site
Point Peninsula Focus, Vine Valley Aspect
Length of fig. 6 is 7 1/16 inches

1-3, multiple unilaterally barbed harpoon, or more probably projectile points; 4, 5, conical antler arrowpoints; 6, 7, thin curved needles, made from deer rib; 8, beaver incisor hafted in antler beam; 9, 10, large antler flaking tools; 11, deer antler tine, detached by cutting and breaking, otherwise unmodified; 12, large flaking tool, made from base of deer antler; 13, double-pointed bone implement, oval in section; 14, worked piece of long bone; 15, awl-like implement from long bone; 16, deer ulna awl; 17, worked anterior segment of deer ulna; 18, 19, fragments of unworked beaver incisors.

Photograph by P. M. Pringle, Toronto, Canada.
Collection of P. M. Pringle.

Plate 83.

Bone Artifacts and Unworked Bone
From Child Burial, Port Maitland Site
Point Peninsula Focus, Vine Valley Aspect
Length of fig. 21 is 6 3/8 inches

20, unworked deer antler tine; 21, two views of deer scapula scraper; 22, 23, two views of eagle humerus with smoothed distal condyle; 24, unworked antler fragment; 25, 26, unworked portions of plastron of soft shell turtle; 27, 28, beaver incisors, root end broken off, incisal edge ground chisel-shape; 29-31, porcupine incisors, similarly treated.

Photograph by P. M. Pringle, Toronto, Canada.

Collection of P. M. Pringle.

Bay of Quinté Component (Plate 53, site 13)[1]

Mr. Wallbridge's lucid account of the form (annular), arrangement (usually in pairs), and composition (fire-broken rock and black earth) of the numerous mounds about the Bay of Quinte, on the north shore of Lake Ontario, admits of no doubt that here is located another group of the mysterious structures known to exist at several places in New York state, particularly around Perch Lake in Jefferson County.[2]

After examining several with the negative cultural results attending such investigations in New York, Mr. Wallbridge had the good fortune to select one sheltering what the writer believes were intrusive inhumations of the Point Peninsula culture. In the hollow center, under a limestone slab occurred a few fragments of human bone, together with pieces of birch bark (mica ?) and a sharpened bone implement, nearly 8 inches long (evidently an awl).

"About two feet from the surface, on removing a flat stone, three crania were exposed, in what appeared to be a rude box, composed of flat limestones. One of these crania, being uppermost, was broken by the carelessness of one of the labourers employed to excavate. It was smaller than the other two and rested upon them. Of the other heads, one laid upon its side, facing north, the body of which would lie due east and west, the feet being towards the east. The other one shewed the skull uppermost as if the body had been placed erect. On clearing away the broken stone and soil a great many bones were found, in fact almost entire skeletons; and from their positions, these evidently belonged to the heads in the box. The latter had probably been separated from them by the compression of the sides of the box or by the intertwining roots of the overgrowing trees; and this may also to some extent account for the position of the crania. From all the circumstances connected with these three skeletons, I am led to believe that they were originally entombed in a sitting posture, back to back, having their heads merely surrounded by flat stones, which rested upon their breasts or folded arms, whilst the remainder of the bodies were covered or built up in the general material of the work."

Associated with the remains were the large antler (?) comb, portrayed on Plate 87, fig. 5, splinter awls, a large multiple unilaterally barbed harpoon, "a few lumps of iron ochre," a bear canine, beaver incisor, 3 long tubular conch columella beads, several natural concretions and fossils, unworked bone pieces, including the sternum of an eagle, and "a pair of horn-cores resembling those of a ram" (fossil cup corals?).

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[1] Wallbridge, 1860.

[2] The problem of these annular mounds is considered later in this paper (pages 313-318).

Plate 84.

Bone and Chipped Stone Articles
From Child Burial, Port Maitland Site
Point Peninsula Focus, Vine Valley Aspect
Length of fig. 7 is 2 1/8 inches

a-q, unmodified pectoral spines of large catfish (Great Lakes or Northern); r-y, gorges (r-t, made from pectoral spine of large catfish, may be part of compound fishhook; u-y, made from mammal long bone splinters, oval or round in section, seem to be gorges); groups I, II, z, unmodified dorsal spines of bullhead (?); 1-7, broad, thin, side-notched projectile points; 8, triangular projectile point with concave base; 9, drill, based on rough spall; 10, triangular drill with concave base; 11, drill with expanded base.

Photograph by P. M. Pringle, Toronto, Canada.

Collection of P. M. Pringle.

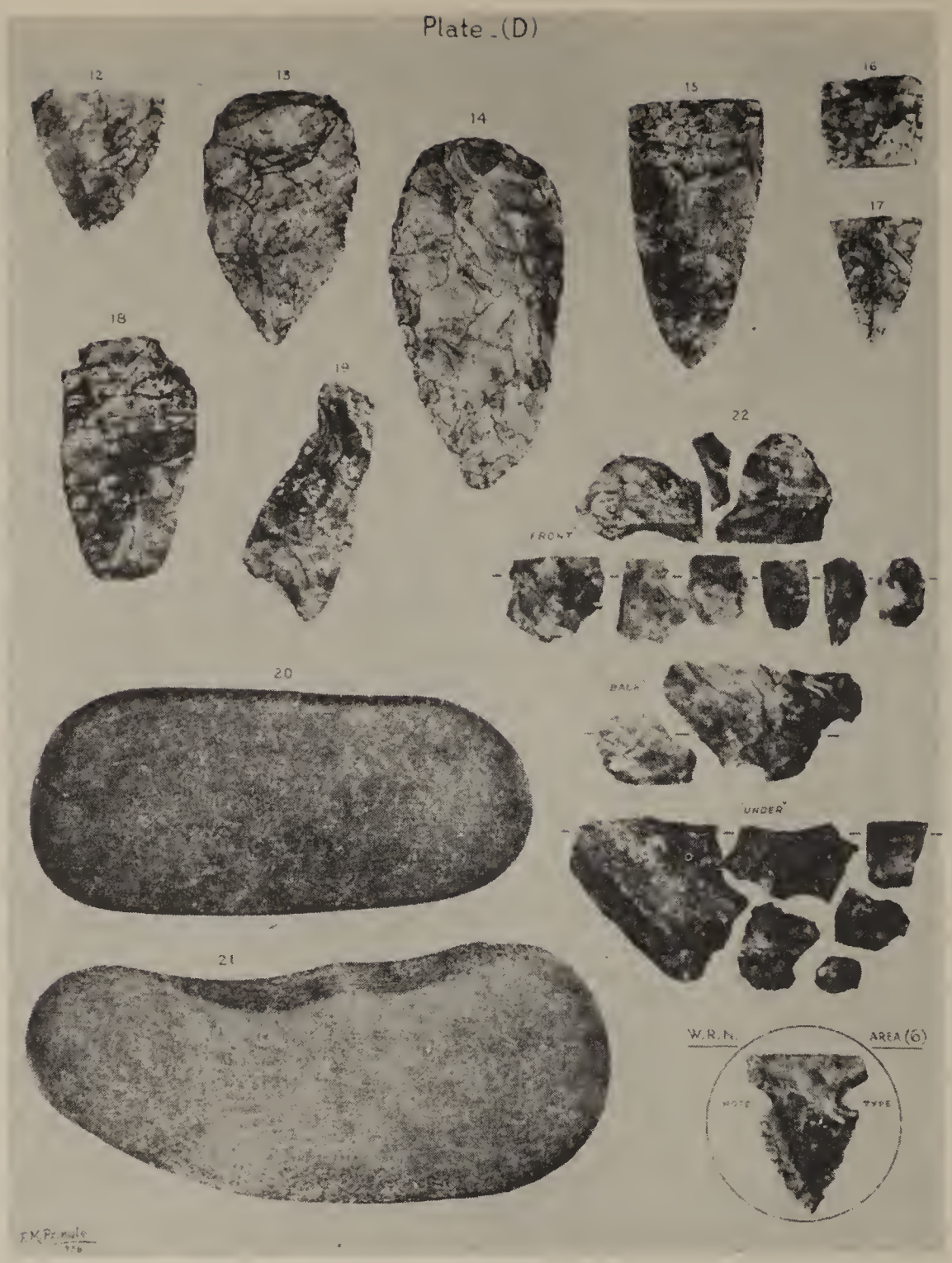

Plate 85. Chipped and Rough Stone Implements
From Child Burial, Port Maitland Site
Point Peninsula Focus, Vine Valley Aspect
Length of fig. 21 is 5 1/4 inches

12, flake knife, edge retouched; 13, 14, large triangular end scrapers; 15-17, thin cache blades; 18, ovate end scraper (from spall); 19, side scraper (from spall); 20, whetstone from flat oval pebble; 21, similar, but deeply abraded on edge; 22, unworked flint chips.

Photograph by P. M. Pringle, Toronto, Canada.

Collection of P. M. Pringle.

Material: 12-19, 22, mottled Onondaga chert; 20, 21, sandstone.

Port Maitland Component (Plate 53, site 14)

In the dunes on both sides of the mouth of the Grand River, on the Niagara Peninsula, Ontario, Canada, many relics of former occupations have from time to time been exposed by drifting sand. The most notable known discoveries were made in 1907 and 1938, the first accidentally by a dredge crew on holiday, the second under the close scrutiny of Messrs. Peter M. Pringle and Harry Freestone. To Mr. Pringle of Toronto, also goes the credit for assembling, with the most meticulous thoroughness, and by ingenious labors extending over a period of seven years, all that is known about the earlier find, the so-called "Chief's Grave." The writer is deeply indebted to Mr. Pringle for generously placing at his disposal the exemplary records relative to the burials and exceptional photographs reproduced as Plates 78-85, and further, for conducting him to the site where examinations, regrettably negative, were made in June, 1940.

Briefly the facts are as follows: Attracted by the wind-exposed clay pipe bowl, shown on Plate 78, fig. 1, the dredge workers soon exposed the top of a human skull in contact with a large sheet of what was probably mica. Further digging disclosed the remainder of a skeleton sitting upright, as judged from the position of the long bones, which were pulled straight up "like carrots." All, including the cranium, were surrounded by red paint. Two deposits of mortuary objects were met with. One, near the head, contained a considerable number of "shell beads, chert, and bone objects," part of which was subsequently dissipated. Close to the pelvis were a pendant, platform pipe, and two large combs, described as a "pair," but one of these being badly broken, is represented now only by a tooth.

The greater portion of the contents, illustrated on Plates 78-80, passed ultimately to Mr. Ralph W. Schooley, residing at Humberstone, Ontario, from whom Mr. Pringle obtained them for photographing and the restoration of the preserved comb.

During the course of his detailed investigations of this find and his survey of the Grand River, Mr. Pringle had occasion many times to study the changing topography of the dune area, and on one such trip, accompanied by Mr. Freestone, the second skeleton was discovered very close to the spot where his calculations had located the previous burial. It pertained to a child, closely flexed on the right side, heading east and facing north (Plate 81). Mr. Pringle's notes, which have omitted nothing, state that the associated furnishings, portrayed entire on Plates 82-85, and inventoried in the trait table (pages 354-366), composed a "pillow-like stack" under the skull, from the occiput to before the face.

These finds, which constitute by far the best evidence of the Point Peninsula Focus from Canada, have much in common with New York components numbers 2, 5, and 7, particularly the former, which was also a sitting burial in hematite, accompanied by a similarly ornamented comb.

Plate 86. Types of Barbed Points and Certain Classes of Polished Stone Artifacts From Burials, Various Components in New York and Ontario, Canada Point Peninsula Focus, Vine Valley Aspect

1-4, 7, 8, Kipp Island, New York; 5, 6, Port Maitland, Ontario; 9, René Menard Bridge, No. 1, New York; 10, Jack's Reef, New York; 11-16, 18, 19, Point Peninsula, New York; 17, René Menard Bridge, No. 2, New York; 20, 21, Sea Breeze, New York; 22, 23, Oberlander, No. 2, New York; 24, near Geneva, New York (excavated by Rochester Museum, 1935); 25, West Rush (Wray), New York; 26, Point Peninsula, New York; 27, Port Maitland, Ontario; 28, Bluff Point (Cayuga County), New York (excavated by Carl Armbruster, Cayuga, New York); 29, 32, 34, 35, Kipp Island, New York; 30, 31, Oberlander, No. 2, New York; 33, René Menard Bridge, No. 2, New York.

All shown photographically in plates, except figs. 24, 28, 32. Fig. 24, gorget, of striped slate, with incised zig-zag design along either edge, Rochester Museum collection; 28, pendant, of striped slate, in collection of Carl Armbruster, Cayuga, New York; 32, tubular pipe (contained dottle), of striped slate, in collection of Herbert Bigford, Earlville, New York.

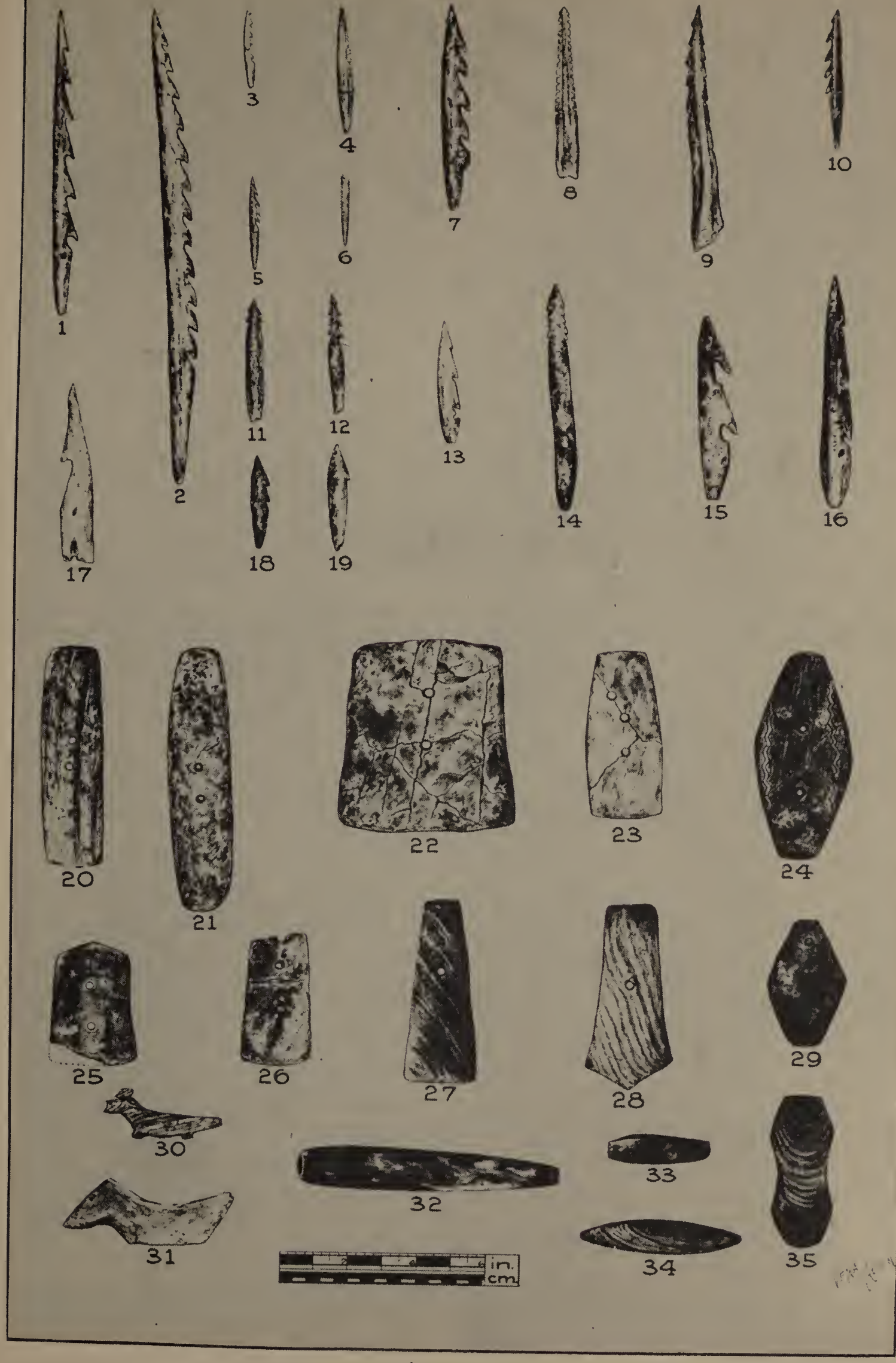
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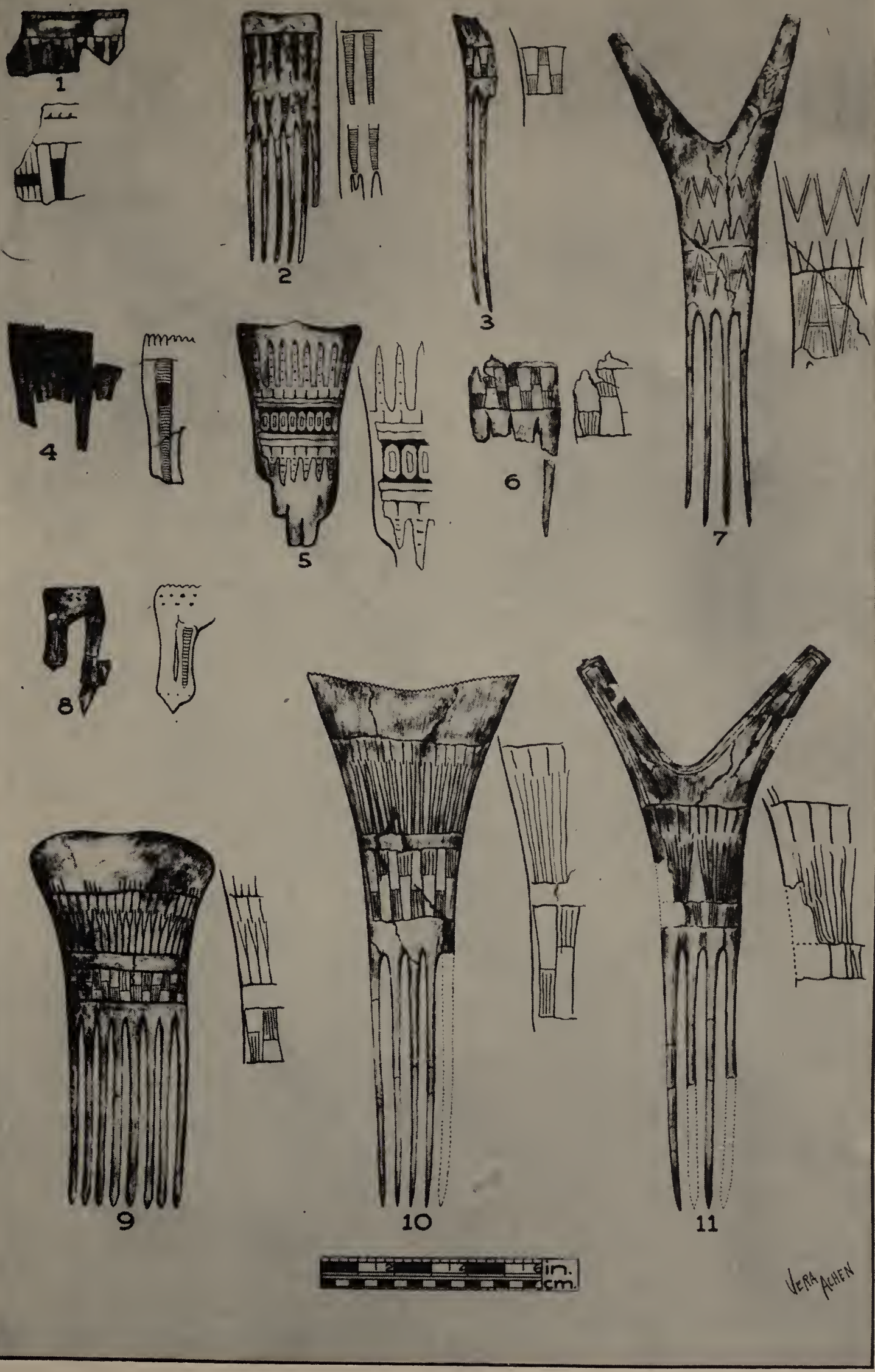
Plate 87. Antler Combs
Various Sites in New York, Ontario, Canada and Virginia
Point Peninsula Focus, Vine Valley Aspect
(10, 11, from Virginia, may not be of this culture)

1, 4, 8, from cremated burial, Jack's Reef, New York; 2, found with seated adult male skeleton, covered with red paint, Avon (Durkee), New York; 3, 6, 7, from flexed burials, Kipp Island, New York; 5, from multiple burial of adults in sitting position, Bay of Quinté, Ontario; 9, from burial of adult male in sitting position, covered with red paint, Port Maitland, Ontario; 10, 11, from a flexed mound burial near Linville, Rockingham County, Virginia.

Note close similarity of decoration (also form in 7 and 11), consisting of incised triangles and line-filled triangles.

All shown photographically in plates, except figs. 10, 11.

Fig. 5, reproduced by permission from "The Canadian Journal," New Series, No. XXIX, 1860; figs. 10, 11, reproduced by permission from Bulletin of the Smithsonian Institution, 1894.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VERA ACHEN

Craniometric Data

Twenty-one crania, 10 male, 11 female, from 5 components, constitute the series from the Point Peninsula Focus. They exhibit a rather considerable range of variation, both as a whole and within the component groups. Except for a few males they lack the rugosity displayed by the Middlesex skulls. In both sexes the vault is prevailingly of moderate length (mean cephalic index, male, 75.6, mesocephalic, range 70.4 - 79.5, average deviation 2.8; female, 76.8, mesocephalic, range 69.1 - 82.4, average deviation 2.9) and medium height (mean height - length index, male 72.4, orthocephalic, range 70.0 - 75.0, average deviation 1.0; female, 73.9, orthocephalic, range 69.2 - 77.9, average deviation 2.4). Save for one, the male face, of which 7 are preserved, is of medium height (mean total facial index 87.2, mesoprosopic, upper index 53.0, range total face 83.5 - 89.2, average deviation 2.1), the female face[1] being markedly lower (mean total facial index 82.8, chamaeprosopic, upper index 50.6, range total face 81.2 - 85.2, average deviation 1 6). Orbits (intact in 8 male and 4 female skulls) average medium for males (mean orbital index 81.1, mesoconch, range 75.6 - 87.2, average deviation 2.8) and rather higher for females (mean orbital index 85.9, hypsiconch, range 82.4-92.5, average deviation 3.3), while the nasal aperture of both sexes (8 male,5 female) is in most cases broad (mean nasal index, male, 51.7, platyrrhine, range 46.9 - 55.8, average deviation 2.5; female, 52.9, platyrrhine, range 42.3 - 63.2 average deviation 5.0).

Middlesex Focus

This, even more than the Point Peninsula Focus is a mortuary complex, for not a single habitation site has been studied in connection with the burials. This is not surprising if it be remembered that only one and part of another of the approximately half score of cemeteries was explored by a professional worker. Laborers or relic collectors, some more competent and conscientious than others, ravaged the great majority. As in the case of the Point Peninsula Focus, almost nothing has been published on these finds[2] and complete data are not available for even one site of this culture.

The distribution, as determined by the described burials, and surface finds of the most diagnostic artifact, what the writer has called the blocked-end tube (Plate 88), extends from the Allegheny Valley northeastward across central New York, includes the upper St. Lawrence, and especially the Lake Champlain Valley (Plate 53). An area of concentration also appears in the lower Connecticut Valley. Little horizontal overlap with the Point

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[1] 8 examples.

[2] See references under components on pp. 187-197, 198-200.. The writer attempted a concise synthesis in a paper published in 1937 (1937a, pp. 186-187).

Peninsula is indicated, the two seeming to be mainly eastern and western manifestations respectively. This, and the large number of shared elements, especially with the assumed early stage of the Point Peninsula, suggests a measure of coevality of fundamentally related cultures. Pending new evidence, however, both points must remain obscure; only a statement of similarity and difference will be vouchsafed. The first is already included in the category of probable determinants for the Vine Valley Aspect, on page 115. A close comparison, is precluded by the paucity of recovered evidence for the Middlesex (see trait table on pages 370-373). The principal discrepancies are on the one hand the diagnostics of the Point Peninsula, viz., the straight-base platform pipe, ridged-base birdstone, comb, and large flaker;[1] on the other the distinctive elements of the Middlesex, comprising the blocked-end tube, the double-pointed or "willow-leaf" knife (Plate 90, fig. 3), the bone gouge (Plate 90, fig. 1),[2] and the boatstone. Of more limited occurrence in the culture, and therefore less reliable as markers, are the discoidal stone, perforated elk canine, and the form of the birdstone representing only the neck and head.

While the Point Peninsula Focus has its closest affinities with the Intrusive Mound culture, the Middlesex has equally definite, but less numerous analogies, with the Adena Phase, also present in the Ohio area. The chief coincidences are the blocked-end tube and discoidal shell bead, but the square copper awl, copper bead, and boatstone are also reminiscent.[3] While the Adena is suggested, the source of these elements in the Middlesex is still uncertain.[4]

Components of the Middlesex Focus

Vine Valley Component (Plate 53, site 15)

Both the aspect and the focus derive their names from this extensive site on the McComb farm, on the northern outskirts of the hamlet of Vine Valley, Middlesex Township, Yates County. It occupies an oval sand knoll along the north side of the gully carrying Vine

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[1]The hafted beaver incisor cutting tool was formerly considered diagnostic of the Point Peninsula Focus. With the discovery of numerous examples on the Bennett site, Orwell, Vermont, indubitably of the Middlesex Focus, this trait must be shifted to a diagnostic position in the Vine Valley Aspect instead.

[2]At least two examples were also recovered from the Bennett site, recently found in Orwell Township, Vermont.

[3]Greenman, 1932 and by correspondence of April 12, 1941; cf. Webb, 1940, pp. 53-55.

[4]The following correspondences are to be noted with the Red Ochre Phase of Illinois, probably an Adena variant: flexed, bundle, and cremated burial; burials with fair amount of grave goods, of which stonework predominates; powdered hematite over burial; prevalence of large, lanceolate or leaf-shaped blades, with curved or truncated base, relatively thin and evenly flaked; shell pendants; rolled tubular copper beads; copper pins or awls, square in section; and possibly grit-tempered cord-roughened pottery. (Cole and Deuel, 1937, pp. 55, 65-67, 89, 90).

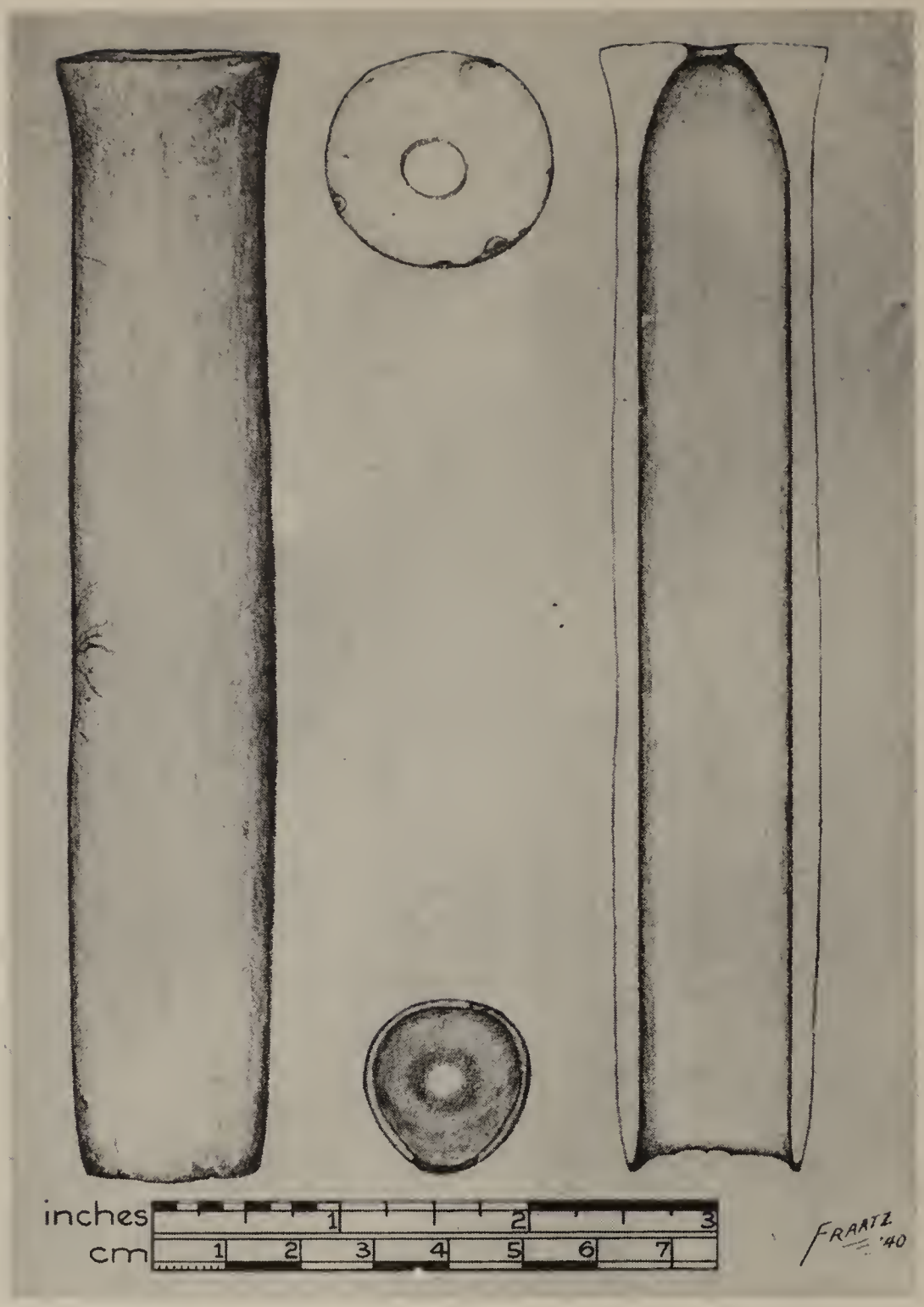

Plate 88.

Blocked-end Tube
Vine Valley Site
Middlesex Focus, Vine Valley Aspect

Drawing of typical specimen in Rochester Museum collection, showing side, end, and sectional views.

Material: Limestone.

Valley Creek into Canandaigua Lake, about a fifth of a mile away, while nearby to the north Bare Hill, famous in Seneca legend, towers imposingly.

For many years prior to 1924, when the New York State Museum finally received permission to excavate, skeletons had been uncovered while terracing a vineyard and later during the removal of sand and gravel, the accompanying artifacts being sold to the museum. Under the supervision of Arthur C. Parker, then State Archeologist, 38 additional burials were found on the steep slope, "ranging from within 4 feet of the top to a distance of 30 feet down."

"Thirty burials were from previous tree or scaffold mortuary disposals; that is, the bodies had been wrapped in skins and furs until skeletonized, when they were removed and buried. The scattered and displaced bones in these burials were evidence of this. With such burials there were only a few shell beads. In most cases a dog had been sacrificed in such graves and buried either over or just to one side of the bundled bones. Some of the bundle burials were of infants but most were original interments and with these were sometimes two dogs. Four of the adult burials were original interments, and in each of these the skeleton was flexed in the usual aboriginal method. Except in one instance there were artifacts with each original adult burial.

"Scattered through the grave area were fire or feast pits, some of them just above the graves and others a little to one side, as if there had been watch fires into which the remnants of the death feast or grave watch had been thrown. There was little in these pits except fragments of animal bones - deer, raccoon, turtle, bear and beaver - and an occasional hickory nut or acorn. There was one exception to this - a pit containing several quarts of charred hickory nuts.

"Artifacts were rare in bundle burial graves, but in the flexed burials there was always at least a bead or two, save in the case of a female interment.

"In pit 22-23, found July 13th, within 12 inches of the surface was found a broken skeleton apparently lying on its face with its knees drawn up under it, and its hands before its face. This burial was near the top of the terrace and directly under the stopping place of the auto trucks which were loaded with sand. This probably accounts for the crushed condition of the skeleton. The side hill in which the skeleton lay was 'pocketed' and at the bottom of the grave more than a dozen grooved sinkers [so-called bolas-stones] were found, the grooves being the long way of the oval pebbles [Plate 89, fig. 10]. The skeleton was of an adult male of perhaps 50 years. The lower jawbone alone of any part of the skull remained intact. On the back of the head was a bone bar amulet [fig. 1, same plate] and just below it resting between the shoulders was a broken two holed gorget of gypsum. In the right eye socket was a notched arrowhead.

"To the east of this pit and adjoining it were two other pits [given the number 23]. One contained a dog burial and the other an infant burial. The infant's skull was missing and the dog had two [discoidal] beads of shell at its neck.

"In pits 9 and 10 which adjoined but were of different depths were interesting objects. Grave 9 was found 4 feet down in the upper terrace. It was of a large child, probably female, and of about 11 years, judging by the skull and dentition. Each joint of the limbs lifted from the diaphysis, appearing as a distinct bone, having a separate surface or suture

Plate 89

Mortuary Objects
Vine Valley Site
Middlesex Focus, Vine Valley Aspect

1, bar amulet (?), from deer metapodial bone; 2, pendant, of conch shell; 3, 8, bone splinter awls; 4, headdress ornament (?), of deer antler; 5, tubular and discoidal beads, of conch columella; 6, conical antler arrowpoint; 7, antler awl; 9, worked deer antler tine; 10, bolas-stone; 11, pottery pipe, of obtuse angle elbow form; 12, steatite pipe, of same type; 13, portion of flat dagger of mastodon ivory (?); 14, bone pendant; 15, stone celt; 16, copper celt; 17, tube in process by pecking (?); 18, side-notched point; 19, cache blades; 20, pendant; 21, 22, bar amulets; 23, blocked-end tube; 24, gorget.

Fig. 4, in Rochester Museum collection; all others in New York State Museum and drawn from photographs furnished by courtesy of that institution.

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between it and the shaft. At 5 1/2 feet down, or 2 feet lower than grave 10, another large grave was found. Upon clearing the bones and brushing them off, so as not to disturb their relation, we found parts of four skeletons - two infants, a headless adult, and a flexed skeleton of an adult male. With the headless skeleton was a crude clay pipe with a flattened stem [Plate 89, fig. 11] and resting under the sternum of the complete skeleton was a steatite pipe" [fig. 12, same plate].[1]

One of the burials opened by the McComb family yielded two stone tubes (Plate 89, fig. 23), (other illustrated by Parker),[2] a portion of another,[3] a clay elbow type pipe,[4] an antler awl (Plate 89, fig. 7), bone pendant (Plate 89, fig. 14), and a copper celt (Plate 89, fig. 16). From another came a large gorget (Plate 89, fig. 24), bar amulet (Plate 89, fig. 21), and a flat dagger segment, reputedly of fossil mastodon ivory (Plate 89, fig. 13).[5] With yet a third was a large necklace consisting of short and long tubular and oblate spheroidal conch columella beads, interspaced with perforated elk canines and a semicircular pendant of conch shell (Parker,[6] Plate 23). Similar shell beads and a pendant from the site are illustrated on Plate 89, figs. 2, 5, of the present work.

The State Museum possesses from other burials found here by Mr. McComb the head of a bar birdstone; a broken bar amulet (Plate 89, fig. 22); a stone pendant (fig. 20, Plate 89); several broken tubes; 3 broken bell pestles (fig. 17, same plate) (the writer considers these pecked limestone objects to be roughed-out tubes); many corner-and side-notched projectile points (Plate 89, fig. 18); 22 rather thick and rudely made cache blades from a single burial (Plate 89, fig. 19); a broad lanceolate knife of white chalcedony, 10 inches long (found with two long strings of shell beads and a tube); a mortar; long, narrow, plano-convex adze; celt (Plate 89, fig. 15); many discoidal shell beads; a copper awl about an inch long; several bone awls (figs. 3, 8, Plate 89); and a conical antler arrowpoint (fig. 6, same plate).

Two complete tubes from this site are in the Rochester Museum (Plate 88). With them in the same grave, Mr. McComb found the extraordinary antler object pictured on Plate 89, fig. 4, suggestive of a horn decoration for a headdress.

The grave-bearing area of the site has long since been destroyed, but tests by the writer on available portions of the knoll to the east (on the Sturm farm) uncovered several refuse pits containing sherds of rude, thick, fabric-impressed ware, derived from straight-sided and probably conoidal-based pots. While proof is wanting, it is suspected that these pertain to the same occupation, for just such pottery was found by the State Museum expedition in pits adjacent to the burials.

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[1]Eighteenth Report of the Director of the State Museum and Science Department, New York State Museum, Bulletin No. 251, Albany, March, 1924, pp. 39-42.

[2]Parker, 1922, Plate 24.

[3]Ibid.

[4]Ibid.

[5]Report of the Director, New York State Museum, Bulletin 173, Albany 1914, pp. 100, 101; cf. Parker, 1922, Plates 22, 24.

[6]Parker, 1922.

Amber Component (Plate 53, site 16)[1]

As reported by Beauchamp in 1897, two well-preserved skeletons, "lying side by side" and heading west, were unearthed from a depth of about 2 feet, "many years ago," while digging barn foundations on the Van Benthuysen farm, north of Amber, on the east side of Otisco Lake, Onondaga County. With them were the fragments of at least three blocked-end tubes, fabricated from a greenish white slate, "arrowpoints and lumps of red and white paint," stains of the hematite being present on the tube sections examined by Dr. Beauchamp.

In the hope of obtaining further data from the site, despite the long elapsed time interval, the writer located the barn referred to and test-pitted its vicinity, finding only an occasional notched projectile point.

Palatine Bridge Component (Plate 53, site 17)[2]

When the roadbed for the New York Central Railroad was constructed along the north side of the Mohawk River, it was necessary to cut through an extensive sand and gravel knoll, covered by an upper stratum of loamy soil about 4 feet thick, mixed with angular sandstone fragments, situated at the base of the steep rocky hillside forming the valley wall, a short distance east of Palatine Bridge, Montgomery County. Many skeletons and a great number of associated objects are said to have been uncovered by the workmen and shoveled into the wagons. A few of the tubes, knives, beads, etc. were thrown out upon the bank for anyone who wished to take away.

Some years later (about 1877), Mr. Samuel L. Frey of Palatine Bridge, explored the small remaining portion of the deposit, with notable success.

"I was fortunate," he writes, "in finding one grave, from which we obtained several relics of interest; the most curious being a tube, the shape and general appearance of which is represented by Fig. 3[Plate 90, fig. 2]. This tube case, being covered with a dark earthy deposit, we were led at first to think was made of clay, but upon closer examination with a powerful magnifier, I am inclined to think that it is of stone, steatite perhaps.[3] Under the

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[1]Beauchamp, 1897a, p. 54.

[2]Frey, 1879, pp. 637-644; also from a newspaper article by the same author, entitled, "Pre-Historic Relics, the Mohawk Valley Supply Neglected by Museums," in the "Amsterdam Semi-weekly Democrat," for June 14, 1899.

[3]One of the tubes (number 1806), about 10 inches long, obtained by Mr. Frey from this cemetery, was examined by the writer in the Fort Johnson Museum, St. Johnsville, New York and was found to consist of limestone, like those from the Vine Valley site.

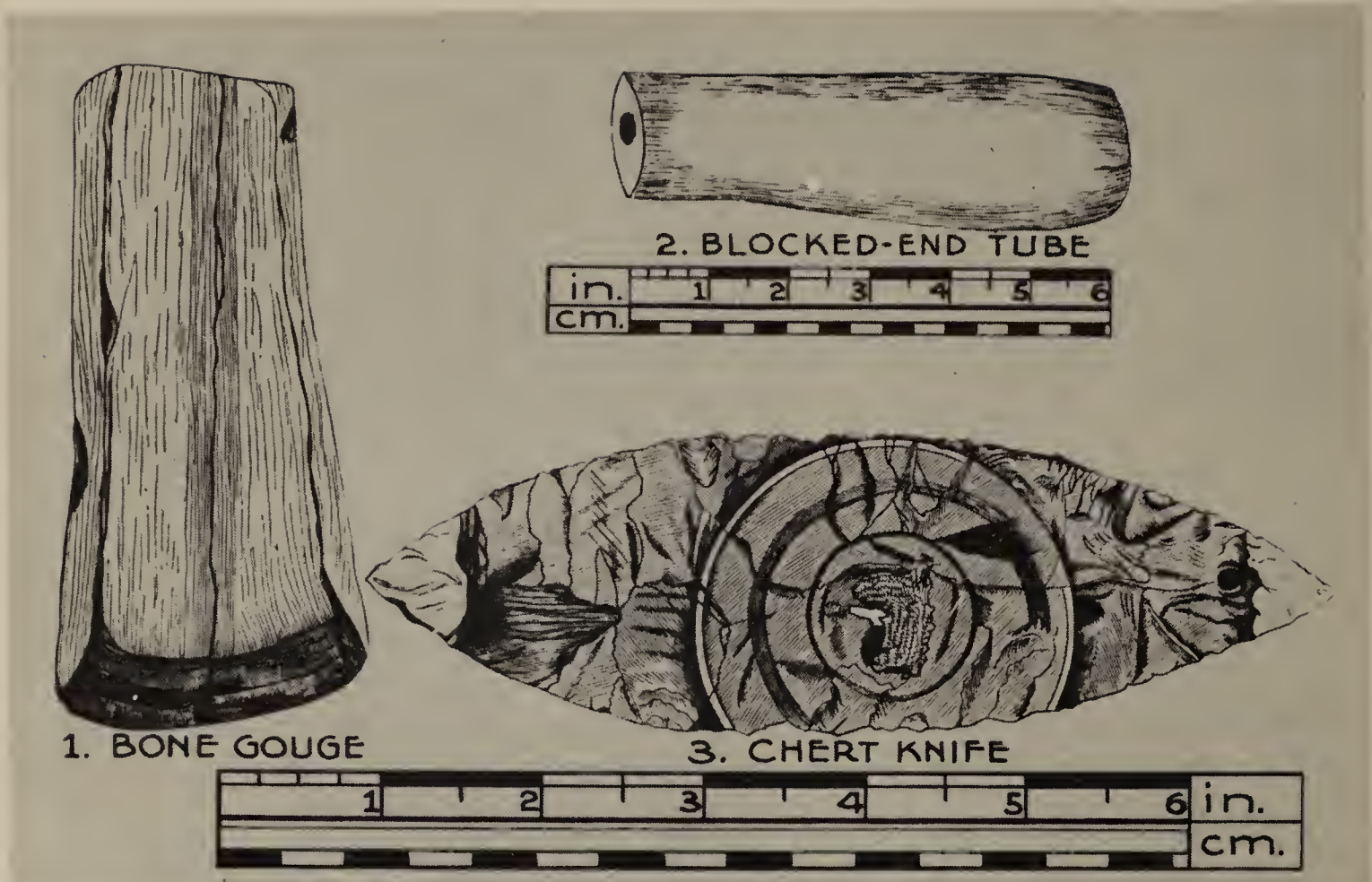

Plate 90.

Bone and Stone Articles
From Burials, Palatine Bridge Site
Middlesex Focus, Vine Valley Aspect

Drawn from illustrations in "The American Naturalist," Vol. 13, 1879.

glass there is none of that appearance of pounded shell or stone so generally observed in all early fictile fabrics. The rings and marks made by the boring tool are also plainly seen in all of them.

"This tube is four and a quarter inches long, the perforation has at one end a diameter of one-quarter of an inch, gradually enlarging until it reaches at the other end a diameter of three-quarters of an inch.

"Besides the tube, we found at this time a sea shell [conch ?], somewhat modified for a drinking vessel, its longest diameter being four inches, a beaver's tooth, several bone awls, three arrowheads, a number of flint flakes, pieces of a tortoise shell, some fragments of deer horn implements, the bone gouge, Fig. 4, [Plate 90, fig. 1] and a large wing bone of a bird.

"A few days after this I again visited the place with a couple of workmen, and prepared to give it a pretty thorough examination. I commenced digging at the grave we had previously found, and cleared off a space several feet wide immediately below it, so as to be able to determine the manner of burial. I found that there had been two bodies buried in this grave, side by side, in a sitting [?] posture, facing the east, a pit having been dug about three feet in depth and lined with flat stones previously to the interment. This manner of lining the grave I have not before seen, but all the graves examined were of this kind. Large boulders and angular pieces of sand rock had, however, in some instances been rolled into or on top of the grave, a protection, perhaps, against wild beasts. The bones were very much decayed, so that it was impossible to save even the skulls.

"In addition to the relics previously described I found another tube; it appears to be of the same material as the one already figured, but differs from it in shape and length. It is eight and one-half inches long and one inch in diameter, having a bore of five-eights of an inch at one end and two-eights of an inch at the other. It is smoothly made but has no polish at present, being covered with an earthy coat, and in patches with a thick concrete of lime and sand. With this tube were found lying side by side, three hornstone implements; they are respectively five and one-half, six and one-quarter and six and one-half inches long, and about one-quarter of an inch thick in the center, beautifully chipped and of perfect proportions, the material approaching nearer to flint than any other specimens found here, the conchoidal fracture being even and perfect, and the edges semitransparent.

"The mineral seems to have been selected out of regard to its beauty, the points of all of them being lighter colored than the rest of the implement. In the largest one, Fig. 5, [Plate 90, fig. 3], appears a small nucleus, around which the mineral formed in concentric circles, shading off from the center to the circumference, and very much resembling some of the hornstone disks made from the material at Flint Ridge, in Ohio.[1] The upper side of these implements was partially covered with the same kind of concrete which adhered to the tube. I have endeavored to show this in the engraving.

"Proceeding into the side hill about six feet I came to another grave, the first indication of which was the red color of the surrounding earth; the body was at the same depth

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[1]The material of these and the similar specimens from the burial at the Bradt site, next to be described, appears to be Harrison County, Indiana flint (Correspondence with H. Holmes Ellis, Ohio State Museum, April 9, 1941).

as the last, and the grave lined with stones in a like manner. Although the bones were too badly decayed to judge with certainty, I believe this to have been an extended [?] burial, as the skull seemed to be in place, and on the same level as the pelvic and leg bones. The body had been buried with the head toward the west. The first object found was a piece of 'slaty graphite' about five inches long, four inches broad and two inches thick, the surfaces of which are deeply grooved and furrowed, apparently with sharp flint-flakes or other stone tools. For what purpose these irregular grooves had been made it is difficult to say; they resemble those in the so-called sharpening stones, but as this material is soft it could not have been used for such a purpose. I think it probable they were made to obtain the powdered black lead for purposes of decoration, or in the manufacture of a pigment of some kind. This piece of ore and the ground for some distance around was covered with a red earthy deposit several inches in thickness, which had colored the earth and stones, as I first observed, as well as the bones and contained relics. In none of the other graves was so much of this red substance found, and none at all in some of them. It is without doubt red hematite, placed in the grave for some purpose.

"Imbedded in this red ore I found two tubes, similar to those before described but longer, the perforation large at one end and small at the other, and the striae and drill marks, showing plainly on the inside, indicate that the material is stone; they were nearly ten inches long and an inch in diameter. If the uses of these tubes were known, we might be able to conjecture why two so similar should have been buried in one grave.

"Near the tubes, and also imbedded in the hematite, I found what had apparently been a necklace or head-dress, composed of copper and shell beads; the former were badly oxydized, and had been made of thin sheets of copper rolled into tubes. That they had been worn around the head or neck was evident, for one side of the skull and the lower jaw-bone were stained a dark copper color. Many of the shell beads were also stained by the copper; those so colored retaining their original polish, being hard and glassy, like ivory, while those not so stained were brittle, many of them falling into a white laminated powder. The shell beads were fifty-nine in number, besides those that were too badly decayed to handle, and were from half an inch to one and three-quarter inches in length, and averaged about half an inch in diameter. They were of that kind so fully described by the early writers, made from the columellae of large sea shells and rubbed and ground smooth with great labor, and afterwards drilled through their longest diameter with greater labor still. The spiral grooves where the whorls of the shell wound round the hard central column, can be seen in all of them. In addition to the beads and probably forming a central pendant to the neck-lace, there was found an elk's tooth. It is stained a beautiful copper color and is highly polished.

On the same level as the last grave, and about six feet to the west of it, I came to another, similar in all respects, lined with flat stones. The body was apparently extended, with the head toward the south; the bones were nearly all decomposed. The relics found were the remains of a necklace of shell beads, little copper tubes and small sea shells [Marginella ?] about half an inch long, with a hole drilled in the large end. The only way that these latter can be strung is with a 'waxed end' tipped with a bristle, such as shoemakers use.

"In addition to what has already been described, the workmen found two graves further to the east and lower down on the hillside. The first contained merely a skull and a

few large leg bones, the interment being unlike the others. The skull rested face down on the other bones, the ends of which had apparently been gnawed by some carnivorous animal, the tooth marks being plainly visible. From these circumstances I think the bones may have been collected on the surface and buried as I found them [bundle burial ?]. The skull, although too much decayed to be taken out except in small pieces, was fully twice as thick as the others, with the ridges largely developed. The marked anatomical differences and the burial, so unlike the others, there being no relics found, would indicate that this man belonged to another people. At any rate little respect seems to have been paid to his remains.

"The second grave contained nothing but the mouldering skeleton of an individual who had been buried facing the west.

"A few days after this I made another examination of this place, accompanied by a friend. At this time we found but one grave. It was a short distance west of the others, and similar to those already described, with the same lining of flat stones. The bones were at a depth of four feet, that being the deepest grave of any found. It was apparently an extended burial, the skull rested on a stone a little above the level of the body and faced the west. In this grave I found two shell beads and one hundred and eighty-nine arrowheads; the latter were all of one type, leaf-shaped with truncated bases [cache blades ?]. They vary from one inch to two inches in length; the material is chert or hornstone; and they are sharp and chisel-like at the base, with serrated edges and sharp points."[1]

Still another grave opened here by Mr. Frey, but undescribed, produced 30 blades of the same character and a copper awl, square in cross-section.

Bradt Component, Near Hoffmans (Plate 53, site 18)

In 1899, some boys engaged in digging a hole to bury a lamb on the Bradt farm situated about half a mile east of Hoffmans, Schenectady County, on the high sand terrace bordering the Mohawk Valley on the north side, came upon a burial accompanied by four broad, thin, double-pointed knives of bluish flint, 4 1/2 to 5 1/2 inches in length, and a stone tube, unfortunately broken with the shovel, approximately 8 or 10 inches in length, with a tapered base, terminating in the customary "blocked-end." It is said to have contained a black powder, possibly tobacco residue.

Mr. Percy Van Epps of Glenville, New York, to whom the writer is indebted for this account, described these objects to him in 1937, and beyond cavil they conform typologically with the artifacts from Palatine Bridge, a few miles up river, illustrated on Plate 90, figs. 2, 3. Extensive test pitting by the writer and Mr. John Swart of Hoffmans, over a con-

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[1] Frey, 1879, pp. 639-644.

siderable area surrounding the spot indicated by Mr. Van Epps as the probable grave locus, failed to uncover more than a few chert flakes.

Toll-Clute Component (Plate 53, site 19)

About 1889, while digging gravel from the level terrace lying nearly a third of a mile north of the Mohawk River, some two miles northwest of Scotia, Schenectady County, on the former Toll-Clute farm, workmen exhumed several burials in fair condition accompanied, according to Mr. Percy Van Epps, a well-informed resident of the locality, who kindly described the circumstances to the writer in 1937, by several blocked-end tubes, one engraved; a gorget; boatstone; flat copper celt, about 5 1/2 inches long; several bone and antler awls; a single-barbed harpoon; about 100 tubular copper beads, made of rolled strips of metal; and many cylindrical conch columella and Marginella shell beads.

In the possession of a Mr. Barhydt, owner (1937) of the farm, the writer saw a fragmentary tube and gorget from a red paint-bearing grave in this cemetery. The former, of greenish gray slate, is 6 3/4 inches long, 1 1/8 inches in diameter at the large end, from which it tapers to 15/16 of an inch at the broken end, where the orifice is greatly constricted, indicating its inclusion with the blocked-end type. At the larger end are a number of rudely etched and line-filled triangles. The oval gorget, also broken, is of dark banded slate, with two complete perforations and another part way through.

New England Components (Plate 53, sites 20-25)

Brief descriptions of these cemeteries, and some illustrations of their contents, have been given by Willoughby.[1] Most notable are the discoveries at Holyoke, Massachusetts and Swanton and Orwell, Vermont. At and near the former locality, on the Connecticut River, 21 graves opened in 1864 produced blocked-end tubes, a bar amulet, copper and shell beads, a copper awl, two steatite cooking pots, and chipped chert knives.[2] Still more important was the Swanton burial component, on the east side of Lake Champlain, in northern Vermont, recorded by Professor George H. Perkins.[3] Here, beginning about 1861, at least 25 much-

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[1]Willoughby, 1935, pp. 82-87.

[2]Ibid., pp. 83-84.

[3]Perkins, 1873, pp. 76-100.

decomposed skeletons, some evidently covered with red paint, were dug from a sand knoll. The following types of artifacts are said to have been included among the grave goods: 10 or 12 blocked-end tubes, some containing stone plugs; Marginella and tubular conch columella beads; cylindrical copper beads; a copper awl; 2 birdstones representing only the neck and head of the "bird" rising from an oval base;[1] bar amulets; boatstones; slate pendants and gorgets; a discoidal stone; celts; and chipped knives.[2]

Excavations conducted in 1933-34 by Mr. Godfrey J. Olsen for the Museum of the American Indian, Heye Foundation uncovered 19 burials of this culture near Orwell, on the east shore of Lake Champlain, nearly opposite Fort Ticonderoga, in Addison County, Vermont. The deep graves occurred on the lake terrace in what the writer judges, from a subsequent inspection, to have been a broad sand-filled natural basin in the clay subsoil, such as occurs here and elsewhere. Few traces of bone remained and there was some evidence of cremation. Powdered hematite had been placed in some of the graves which yielded the following accompaniments: 13 blocked-end tubes of stone or unfired clay, several having stone or clay plugs near the small aperture, and some still preserving an inner coat of char or dottle, suggesting their employment as pipes; a narrow bar type of birdstone; 3 bar amulets; 2 boatstones; massive beads, a large awl and a flat celt of native copper; celt and adze blades of polished stone, one of the former fashioned from chalcedony; side-notched and stemmed points, thin cache blades and oval end scrapers of chipped stone; nodules of decomposed iron pyrites, probably from fire-making sets; and hematite and graphite paintstones.[3]

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[1]See Willoughby, 1935, Fig. 55, k, 1. A birdstone of this kind came from the Hopewell Group, Ohio (see Moorehead, 1922a, Fig. 34).

[2]Willoughby, 1935, p. 85. These "chipped knives," seen by the writer in the museum of the University of Vermont, Burlington, are of the variety termed by him thin cache blades.

[3]Willoughby, 1935, pp. 85-86; also from data kindly provided by Mr. Olsen and from an examination of part of the material in the Museum of the American Indian, Heye Foundation.

A second cemetery of the Middlesex Focus, the Bennett site, several times referred to, has recently been discovered by gravel workers in the same Township of Orwell, south of Chipman's Point on Lake Champlain. In the summer of 1942 the flexed skeleton of a child was exhumed here by Mr. Payson E. Hatch for the Champlain Valley Archaeological Society. With the badly decomposed remains were a crushed blocked-end tube of stone, containing a stone plug near the flaring end; a thin side-notched jasper point, 3 3/4 inches in length; a native copper awl, 1 7/8 inches long; and 2 conch columella beads.

The burial goods from the site, mainly in the collection of Mr. George Colett, are on exhibition in the museum of Fort Ticonderoga. Through the courtesy of this institution photographs of many of the objects were generously sent to the writer, with other data, by Mr. Hatch. The following incomplete inventory, omitting artifacts already mentioned, was made from this source: 4 blocked-end tubes of stone; 2 "keeled" boatstones of striped slate (very similar to fig. 54, e, of Willoughby, 1935); 2 thick-polled stone celts with truncated poll and flaring bit, one of chipped and polished chert; more than a score of thin cache blades

Other tube-producing burials have come to light in Connecticut,[1] Maine,[2] Ontario,[3] and New York,[4] and surface finds of this most diagnostic element of the Middlesex Focus are still more widely spread in the northeast.[5]

Craniometric Data

Only 3 male crania, obtained by Parker from the Vine Valley station, are known for the Middlesex Focus.[6] Morphologically they are larger, more robust, and have more pronounced supraorbital tori and prominently jutting malars than is the case with the majority of the Point Peninsula skulls. They range from medium to broad (mean cephalic index 79.5, mesocephalic, range 75.6 - 85.0, average deviation 3.6); possess a moderate height of vault (mean height-length index 71.8, orthocephalic, range 70.3 - 74.3, average deviation 1.6). Both the total and upper face is low and broad (mean total facial index 84.1, chamaeprosopic, upper index 47.2),[7] while the orbits average medium in size (mean orbital index 76.8, mesoconch,

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(found in red ochre); several thin side-notched points (up to about 4 inches in length); many split and ground beaver incisors; 7 antler-hafted beaver incisor cutting tools (typologically identical with those of the Point Peninsula Focus and the first reported from a Middlesex site); 5 fragments of flat centrally perforated "netting needles;" numerous awls made from splinters and whole bones, including the splanchnic, of various mammals; several conical antler projectile points, one with a large basal spur; a barbed bone fishhook with knobbed shank; 2 broad, slightly curved, bone gouges; a bone gouge or "flesher" (about 10 inches in length), having a curved serrated lip, made from a long-bone with partially preserved articulation; many Marginella shell beads; numerous long conch columella beads, some of small, others of large diameter; and a thin, round, centrally perforated shell pendant.

[1]Willoughby, 1935, p. 87.

[2]Moorehead, 1922, pp. 46, 47.

[3]Wintemberg, 1928, p. 180.

[4]One of several, allegedly from graves at Kashong, on Seneca Lake, Ontario County, is in the Rochester Museum. Investigation shows that an indeterminable number of graves, said to have been rock covered, were destroyed by highway construction about 1900.

[5]See Willoughby, 1935, p. 92 ff. for New England distribution. The writer's files contain verified records of finds from near Stillwater, Saratoga County; the foot of Grindstone Island in the St. Lawrence River, Jefferson County; near the junction of the Delaware River and the Beaverkill, Delaware County; and at several places in the Alleghany Valley of northwestern Pennsylvania, viz., West Hickory, Tionesta and Hunter's Station in Forest County and Kinzua, Warren County.

[6]Measured by the writer in the New York State Museum, Albany.

[7]One and 2 examples respectively.

DISTRIBUTION AND CERTAIN MOUND COMPONENTS OF THE HOPEWELLIAN PHASE, NEW YORK FOCUS [1]

1. Kane Mound
2. Liddydyke Mound (?)
3. Murray Hill Mound
4. Squawkie Hill Mound group
5. Geneseo Mound
6. Bamber Mound
7. Kipp Island Mound

[1] Nos. 1, 2, 6, 7 provisionally attributed to this focus.

Plate 91. Distribution and Certain Mound Components of the Hopewellian Phase, New York Focus

range 74.9 - 78.0, average deviation 1.3), and the nasal aperture is medium to broad (mean nasal index 54.5, platyrrhine, range 50.0 - 59.1).[1]

Hopewellian Phase, New York Focus, ? Pattern

The presence in the northeastern area of burial mounds, certain non-mound burials with associated grave goods, and artifacts from surface sites, all linked in some obscure way with the "Mound Builders of Ohio," has long been recognized, and as already stated, has induced Parker to define a "Mound-Builder occupation" for New York,[2] Wintemberg to speak of "a northeastern extension of the so-called mound-builder culture centering in Ohio,"[3] and Willoughby to conclude that what he terms the "Old Algonquian" culture in New England, characterized by a substantial majority of the same artifact forms found in the Vine Valley Aspect of the New York area, is a less specialized prolongation or peripheral survival of the Hopewellian culture.[4]

A detailed analysis of the contents of the numerous small burial mounds of western Pennsylvania,[5] western New York,[6] and lower Ontario,[7] demonstrates the non-Hopewellian, and to a large degree non-deterministic, nature of much of their scanty contents, while the surface finds reported from the vicinity of the New York tumuli[8] and the artifacts from the non-mound burials in New York[9] and Ontario,[10] attributed to the Hopewellian culture, are actually seldom or never recovered from true Hopewellian mounds.[11]

As the result of such comparative studies and certain excavations already or still to be described, it has seemed to the writer that the above referred to "Mound-Builder Culture" in the northeast is too broad and inclusive; that suggestive connections appear with manifestations of the Ohio area, other than the Hopewellian; but that true evidences of this

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[1]2 examples.

[2]Parker, 1922, pp. 83-86.

[3]Wintemberg, 1928, p. 195.

[4]Willoughby, 1935, pp. 305-306.

[5]Thomas, 1894, pp. 494-503.

[6]Squier, 1849, p.67ff.;Larkin, 1880; Thomas, 1894, pp. 503-515; Parker, 1922, pp. 87-98.

[7]Wallbridge, 1860, p. 111 ff.; Boyle, 1896, pp. 14-41; 1901, pp. 25-29; Hunter, 1896, pp. 67-79; Wintemberg, 1928, pp. 175-199.

[8]Parker, 1922, p. 86.

[9]Ibid., p. 92.

[10]Wintemberg, 1928.

[11]Reports by Mills, Shetrone, and Greenman, in The Ohio Archaeological and Historical Quarterly, Columbus, 1907-26; Willoughby and Hooton, 1922; McKern, 1931; Cole and Deuel, 1937, pp. 171 ff., 222; Quimby, 1941; Griffin, 1941; Griffin and Morgan (editors), 1941.

Plate 92.

Artifacts from Mounds 1 and 2
Squawkie Hill Site
New York Focus, Hopewellian Phase
1-14, from Mound 1; 15-25, from Mound 2

1, 3, 23, flake knives; 2, quartz crystal; 4, baroque pearl beads; 5, small discoidal shell beads; 6, 8-10, broad side-notched points; 7, broad corner-notched point; 11, curved-base platform pipe; 12, triangular point with concave base; 13, 20, narrow stemmed points; 14, bolas-stone; 15, breast ornament of wood, invested with sheet silver over sheet copper wrappings and containing remnant of two-strand twisted cord; 16, defective comb teeth; 17, attempted restoration of fig. 15, partially dissected to show wooden core and copper envelope; 18, rude cache blade; 19, ovate end scraper; 21, 22, 24, 25, rude, thick, fabric-roughened potsherds.

Material: 1, 3, 23, white, red and gray chalcedony; other chipped stone implements of local gray Onondaga chert: 11, mottled gray, tan and red Ohio pipestone (fireclay); 14, granite.

latter culture do, indeed, appear in certain New York and Pennsylvania mounds, at least.[1] Lack of sufficient data hampers the allocation of others.

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[1]During the summer of 1941, the Pennsylvania Historical Commission explored a mound component of great interest, situated on a slight rise of the low terrace bordering the Alleghany River, some 3 miles north of Kinzua, Warren County, Pennsylvania.

According to information and photographs kindly submitted by Mr. Edmund S. Carpenter, who was in active charge of the excavations, the main features comprised the plow-reduced remnants of three overlapping mounds, closely surrounded by some 48 cremated and 4 uncremated (extended?) burials, which had probably been interred in the rise of sandy loam on which the mounds were erected. The whole complex had a diameter of approximately 120 feet.

Mound Unit 1 held a cist burial of cobblestones and was covered with what appeared to be a reinforcement layer of similar stones, reminiscent of mound 1 at Squawkie Hill, presently to be described. A cremation without artifacts occurred in the cist.

Mound Unit 2 partially overlay mound 1. It closely resembled mound 2 at Squawkie Hill both in construction and contents, having a circumvallation of stone slabs and 2 centrally placed slab-walled and-covered cists, each holding an extended adult male skeleton in fair condition, accompanied by the following mortuary goods: 2 gorgets of elongated type, one with slightly angular ends, the other with somewhat constricted sides; some 54 rude cache blades; 3 rude side-notched points; 4 large sheets of uncut mica; a lump of galena; a small quantity of hematite, both in powdered and in lump form; an unworked antler tine; and a fragment of a turtle carapace.

Mound Unit 3 was in part superincumbent to the two preceding units. There were no stones and the interment consisted of an extended adult burial in poor condition, which had been provided with 4 long, narrow gorgets of striped slate, one with parallel, 3 with slightly convex sides; a broken gorget and one in process, both of the same elongated type; a striped slate pentagonal-shaped pendant; a large sheet of mica; some copper fragments; a sandstone abrader; and a small quantity of red ochre.

Mortuary furnishings found with burials surrounding the mounds embraced the following: about 33 rude cache blades of chert and jasper; 12 rude side-notched points; a triangular end scraper; 2 flake knives of Flint Ridge chalcedony; several rude rectanguloid celts; several sandstone abradingstones; a sheet of mica; 2 portions of elongated gorgets; several small deposits of hematite; a short copper awl; a marine bivalve shell from the south Atlantic; a plain, obtuse angle, pottery pipe, with marked "elbow point"; a grit-tempered, elongate – bodied pottery vessel, with semiconoidal base, everted rim and cord-surfaced exterior; and several calcined fragments of antler tines.

At the northern and southern peripheries of the mound group, a "crematory hearth" was found, one partially filled with calcined bone fragments, ashes, and charcoal.

Loose in the mound earth and on the pre-mound floor, as in the Genesee Valley mounds, next to be considered, were many stone artifacts, potsherds, a pipe fragment, and a marine bivalve, similar typologically to the grave goods, and in addition such non-burial forms

Plate 93. Artifacts from Squawkie Hill Mounds
New York Focus, Hopewellian Phase

a, copper ear ornament; b, curved-base platform pipe of Ohio pipestone (fireclay), bowl top broken and reworked; c, flat copper axe. a,. from mound 1; b, and c, from mound opened in 1899.

Photographs by courtesy of the New York State Museum, Albany, New York.

The first convincing proof[1] of this nature came in 1936-37 with the excavation by the Rochester Museum of three undisturbed burial mounds in the Genesee Valley, until then the only tumuli systematically explored in the northeast.[2] In brief, and beginning with the aforementioned Mound 1 on Squawkie Hill, the nature and probable significance of these mounds is as follows.

Components of the Hopewellian Phase
Squawkie Hill Mounds (Plate 91, site 4)

About the year 1900, Mr. John R. White opened on his premises on Squawkie Hill, a high plateau above the north bank of the Genesee River, where it emerges from its postglacial gorge, near Mt. Morris, Livingston County, one of the most instructive aboriginal mounds in the northeast. It is said at that time to have been nearly circular, with a diameter of about 30 feet and a height of approximately 4 feet. According to Mr. Fred H. Crofoot,[3] a local collector and eyewitness, it possessed a laminated structure, the outer covering, more than one foot in thickness, being of gravelly loam, beneath which lay a sheathing of large water-worn pebbles laid in fine sand, which in turn capped a 2 foot zone of gravelly soil mixed with ashes, charcoal, refuse animal bone, and black camp dirt. This was as the following: corner-notched, semilozenge-shaped, angular-edged (pentagonal-shaped) and narrow-bladed stemmed points; oval and side-notched end scrapers, and scrapers made from broken projectile points; T-shaped drills; a polished trianguloid celt; a disciform pebble sinewstone with 2 shallow grooves; pitted hammerstones; notched netsinkers; fragmentary cylindrical pestles; steatite vessel sherds; and a short, thick, cylindrical copper bead.

Mr. Carpenter is inclined to regard much of this "pre-mound" material as culturally diverse and antedating the Hopewellian occupation, but the writer believes that inasmuch as so many distinctive elements of the mortuary complex (cache blades, flake knives, a fragmentary elbow pipe, potsherds of identical character, etc.) were intermixed with it, precisely as in the Genesee Valley mounds, the total content must be referred to a single horizon. The striking parallels existing between this Pennsylvania Hopewellian site and the New York tumuli afford convincing evidence of their cultural affinity. The suggested Hopewellian influence on such Point Peninsula sites as the Sea Breeze component, where an impressive number of the same traits emerge, also receives new emphasis.

[1]It is true that strong presumptive evidence was afforded by the owner's discovery in a mound (number 1 in our later references) on Squawkie Hill, of unequivocally Hopewellian artifacts. This constituted the strongest evidence for Parker's "Mound-Builder Occupation" and led to the Rochester Museum's investigations there in 1936-37.

[2]Ritchie, 1938c.

[3]Crofoot, 1905, pp. 590-593.

Plate 94. Slab-Covered Central Burial in Mound 2
Squawkie Hill Site
New York Focus, Hopewellian Phase

Note peripheral reinforcement of slabs. A few of the pebbles and small boulders surrounding this are in evidence.

separated from a similar layer beneath by a 6 inch stratum of tough blue clay. The floor consisted of the natural clay subsoil, indurated and discolored by fire. Five burials are reputed to have been found, 2 enclosed in separate stone cists, and 3 grouped together in the refuse layer under the stone casing. The grave goods consisted of 78 baroque pearl beads (Plate 92, fig. 4), 780 small discoidal shell beads (Plate 92, fig. 5), 2 flake knives of pink Flint Ridge chalcedony (Plate 92, fig. 1), a quartz crystal (Plate 92, fig. 2), a curved-base monitor pipe of Ohio fireclay or pipestone (Plate 92, fig. 11), a copper ear plug[1] (probably one of a pair, the other of which was overlooked in the careless digging), and several arrowpoints (Plate 92, figs. 6-8, 12, 13).[2]

In 1930 the writer examined the remnant of this mound, then found to have a maximum height of 2 feet 9 inches. Two side-notched arrowpoints (Plate 92, figs. 9, 10), a chalcedony flake knife (Plate 92, fig. 3), and a rude bolas-stone (Plate 92, fig. 14), were obtained from the floor under an undisturbed section. A portion of a stone-reinforced shoulder, identical in character with that to be described in mound 2, was uncovered on the western side.

About 100 rods to the southwest, according to Mr. Crofoot,[3] workmen drawing sand in 1899 opened a mound wherein, about 7 feet from the surface, they uncovered a burial accompanied by a reworked curved-base monitor pipe, 2 stone gorgets, a native copper axe, and about 80 spear and arrowheads. The pipe and axe were later secured by the New York State Museum and are illustrated in Plate 93, figs. b and c.

In June, 1936, the writer discovered a low untouched mound (number 2), previously hidden by an alfalfa crop, only 45 feet south of Mound 1. It was an oval structure with an east-west axis of 28 feet 9 inches, a north-south axis of 26 feet and a maximum height of 23 inches. The capping layer was of clay loam, but the main body of the fill consisted of sand. Throughout the sand extended streaks of charcoal and ashes containing refuse animal bone, flint chips, an oval flint scraper (Plate 92, fig. 19), a cache blade (Plate 92, fig. 18), a broken arrowpoint (Plate 92, fig. 20), a chalcedony flake knife (Plate 92, fig. 23), and a few coarse fabric-marked potsherds (Plate 92, figs. 21, 22, 24, 25). The shoulder for two feet was reinforced with a platform of roundish river pebbles, about the size of a large orange, bordered on the inside by a double tier of flat overlapping stone slabs, about 3 feet in breadth (Plate 94). In a central cist, sunk 8 inches through an old sodline into the subsoil, partially lined and completely covered by 35 heavy slabs of limestone, sandstone, and shale from the neighboring river gorge (Plates 94, 95), lay an extended adult female skeleton, in poor condition, heading east (Plate 96). The only accompanying articles were what appeared to be the partially decomposed teeth of a large bone comb, placed beneath the knees (Plate 92, fig. 16), and a rectangular breast ornament, 2 by 2 inches, fashioned from a thin piece of wood enveloped in an inner layer of sheet copper and an outer covering of sheet silver (Plate 92, figs. 15, 17).

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[1]Not mentioned by Crofoot. Secured by Parker from White for New York State Museum, and shown, by courtesy of this institution, in Plate 93, fig. a.

[2]It is not known whether these occurred with the burials or loose in the mound fill.

[3]Crofoot, 1905, p. 591.

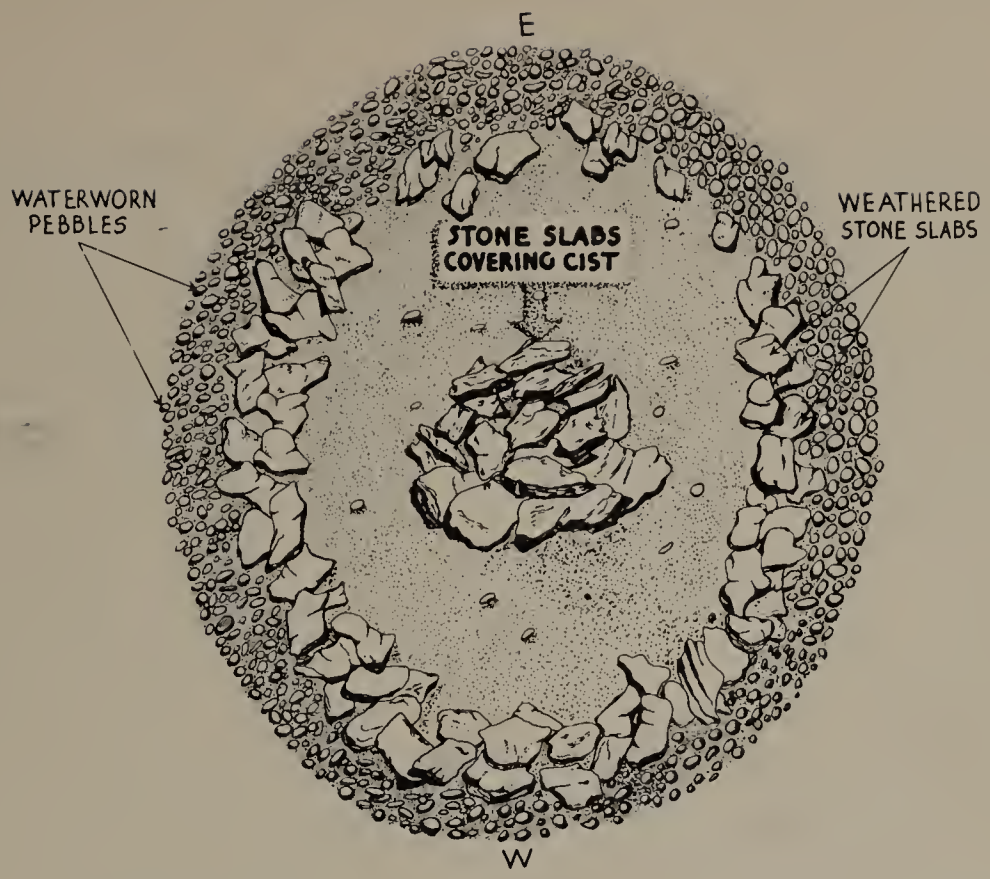

Plate 95.

Diagram of Mound 2, Squawkie Hill
Showing Constructional and Burial Features
New York Focus, Hopewellian Phase

Plate 96. Extended Adult Female Skeleton in Central Subfloor Grave of Mound 2 Squawkie Hill Site New York Focus, Hopewellian Phase

Arrow indicates breast ornament shown in Plate 92, fig. 15.

Plate 97.

Contents of Mound 3
Squawkie Hill Site
New York Focus, Hopewellian Phase

a, plano-convex adze; b, examples of mica flakes; c, rude cache blades; d, examples of specular hematite (mixed with sand to form lumps); 3, examples of cremated human bone.
Material: a, heat-altered steatitic rock; c, gray Onondaga chert.

Nearly a year later (May, 1937) further tests on Squawkie Hill revealed the site of a third almost totally obliterated mound, 24 feet east of Mound 2. Its outline in the ground could easily be traced by the character of the fill, a yellow sand like that constituting the previous two, which had been carried in and heaped upon the humus-denuded clay subsoil of the plateau. The outline was found to be practically circular and about 8 feet in diameter, the height of the sand at center, under 7 inches of plowed topsoil, about 3 inches, and near the periphery about half that. In the center, scattered over an area approximately 42 inches across, were numerous fragments of calcined human bone, some of which had been brought to the surface and scattered by the plow (Plate 97, fig. e). From the fact that three concentration points occurred it is possible that as many individuals were represented, but the whole quantity obtained seems not too large to have been derived from a single body.

On the northwest edge of the bone deposit lay a plano-convex adze of steatitic rock, whitened by intense heat, probably from the crematory fire, kindled elsewhere, since no traces were visible in the mound (Plate 97, fig. a). Beside it had been placed some two quarts of finely divided specular hematite (Plate 97, fig. d), with a thick cache blade about 2 feet distant on either side. Adjoining the bone deposit on the south side was a semicircular arrangement of 30 rudely made cache blades of gray chert, placed singly or in groups of two or three, with the points inward for the most part (Plate 97, fig. c). Several small sheets of biotite mica occurred among the points (Plate 97, fig. b).[1]

Geneseo Mound (Plate 91, site 5)

During the interval (October, 1936) between the last two described excavations, a large and very important mound was excavated 6 miles north of Squawkie Hill, on the opposite side of the Genesee River, near Geneseo, Livingston County, through the courtesy of Mr. William P. Wadsworth. Dr. Cyrus Thomas, about 1885, in his country-wide mound survey for the Bureau of American Ethnology, had reported but not examined this tumulus, and since then its location had been forgotten. It was found to be nearly circular in plan, with a diameter of about 42 feet and a maximum central height of 3 feet (Plate 98). Adjacent surface soils, both humus and sand, the latter predominating, had been utilized in its construction, and cross sections clearly exhibited the lensing structure resulting from accretions of basket loads of earth differing in color. No stratification, stone reinforcement or basal sod line could be detected, the last feature indicating the preparation of the floor by removal of all humus accumulation.

Seven burials were uncovered, three being late intrusions into the top zone by Seneca Indians who had placed European trade goods with their dead. Of the inclusive interments the primary burial was that of a child about 4 years of age, who had been placed in a flexed position beneath a centrally situated platform of large pebbles and small boulders, resting upon several flat shale slabs, which may originally have been set on edge to form a cist (Plates

[1]Trait table for Squawkie Hill mounds appears on pp. 367-369.

Plate 98. Geneseo Mound Before Excavation
Looking West. Maximum elevation 3 feet
New York Focus, Hopewellian Phase

99, 100). Deposited beside and above the head were 19 beautifully mottled pink and white translucent chalcedony flake knives, unmistakably made at the great Flint Ridge, Licking County, Ohio quarries 2 rude notched arrowpoints and a large cache blade of local gray chert; and 2 large antler fishhooks, all illustrated on Plate 101.

Ten feet away a flexed adult skeleton was uncovered (Plate 102), near whose hip lay a carved sandstone platform pipe depicting a salamander (?) (Plate 106, fig. 35). The two remaining interments, were bundle burials or heaps of dissociated bones, indicative of the original disposal of the dead by exposure. The first of these, the badly disintegrated bones of a child, was encountered 3 feet north of the central burial and was obviously inclusive (Plate 99, arrow), the other occurred as a multiple burial in the upper mound fill, 6 feet southwest of the central burial. Interspersed with the bones, which were those of an adult male and a child, was a heavy stain of red hematite. Intrusive pit lines could not be discerned, so it appears probable that burial had been made before the mound's completion.

Distributed, for the most part randomly, throughout the mound fill (Plate 104), were a considerable number of stone artifacts, a copper awl, pottery pipe, about half of a restorable vessel, and sherds of both clay and steatite cooking pots, examples of all being illustrated on Plates 105, 106 (see trait table on pages 367-369 for complete inventory).

An analysis of the sum of the mound features, burial traits, and artifact types, leads to the following conclusions. The stratiform construction of Mounds 1 and 2 at Squawkie Hill, the stone reinforcements, slab tombs, and extended and cremated skeletons also found there, the hearths in floor (Plate 103, arrows 6), use of platform pipes, pearl beads, small discoidal shell beads, quartz crystal, mica, conch shell container, breast ornament of sheet copper and silver over wood, copper ear spool, flat copper axe with expanded bit, chalcedony flake knives, and rude cache blades (usually of larger size in Ohio and Illinois), are definitely Hopewellian elements. Some of them, however, namely extended (rare) and cremated burials, the platform pipe (not, however, of this distinctive Hopewellian form), discoidal shell bead (rare), mica, flat copper axe (rare), chalcedony flake knife, and thick cache blade are also distinctive of the Point Peninsula Focus, while cremation (rare), the discoidal shell bead, and copper celt are likewise reported for the Middlesex Focus of the same (Vine Valley) aspect.

Of the significant remaining mound traits, the comb, semilozenge-shaped point, gorget, elbow pipe, copper awl, bolas-stone, and steatite pot are to be found in the Point Peninsula congeries, the last five however, being as much at home in the Middlesex Focus. Pottery comparisons reveal a somewhat closer evident connection with the latter, if we can accept the cultural provenience of the few pit-produced sherds from the Vine Valley component. Pt. Peninsula type 1 ware, as known from the Vinette component, is thinner and less crumbly, although derived from similar shaped vessels with cord-malleated surfaces.

Plate 99. Rock-Covered Central Burial (Number 1)
and Adjacent Empty Tomb (foreground), in Geneseo Mound
Arrow points to inclusive bundle burial (number 2)
New York Focus, Hopewellian Phase

Plate 100. Child's Skeleton from Central Burial (Number 1) in Geneseo Mound New York Focus, Hopewellian Phase

Mortuary articles (shown in Plate 101) in group behind occiput; cache blade to left of skull.

Plate 101. Mortuary Offerings from Central Burial (Number 1) in Geneseo Mound New York Focus, Hopewellian Phase

1, flat fishhook whittled out of antler; 2, curved bone fishhook; 3, 4, unworked and partially decayed incisors of porcupine and beaver, respectively; 5, 6, rude, thick, side-notched points; 7, prismatic flake knives; 8, thick cache blade.

Material: 5, 6, 8, gray Onondaga chert; 7, red and white banded chalcedony.

Inasmuch as these diversified constituents were intrinsically intermixed in the Geneseo tumulus, which is related to the Squawkie Hill structures by the correlative presence of such diagnostic elements as the platform pipe and chalcedony flake knife, the cultural unity of all the mounds seems assured.

In accounting for this complex several alternative hypotheses are possible. According to the first, it is totally the product of intrusive Hopewellian people, despite the inclusion of a relatively large amount of commonplace utilitarian material, not customarily thought of as Hopewellian, although generally similar to that found in mounds classified as Hopewellian in Indiana,[1] Illinois,[2] and even Ohio, the Turner group in particular.[3] On this assumption it would be more truly representative of the culture as a whole than is the case with the admittedly mortuary aspect presented by the great mound offerings, which may mask the essential Woodland foundation of the manifestation.[4]

The numerous "non-Hopewellian" traits susceptible of duplication in the Vine Valley Aspect suggest the second interpretation, namely a connection with this paradigm, or with a still undefined antecedent Woodland group partaking of the same fundamental widespread culture. Because a whole mortuary complex is involved, and not simply the presence of a few possibly diffusion-acquired elements, it is logical to postulate an actual migration of small detachments of Hopewellian people from the southern Ohio center, equipped with their characteristic artifacts wrought of Ohio materials, probably via both the Alleghany Valley and the south shore of Lake Erie, along which numerous evidences of their sojourn are found.

In the postulated amalgamation of such bands with locally resident early Woodland people, the culturally more advanced Hopewellians would doubtless exert the dominant influence, such as appears particularly in the Squawkie Hill mounds. Time and isolation, however, might bring about a progressive degeneration, like that apparently witnessed in the Geneseo tumulus, where fainter Ohio survivals and a modification of burial practices seem to combine in a peculiar way the traditional customs of the two peoples. A still more advanced stage of this process of culture syncrasy is possibly to be observed at the Sea Breeze component of the Point Peninsula Focus, previously discussed. The confusion regarding the "Mound Builder" culture in the northeast may well emerge from the difficulties of deciphering varying component admixtures of Hopewellian influence, produced directly or indirectly by diffusion, on diversified Woodland cultures in this area.

A third, and in the light of existing evidence, the least probable explanation, would derive such complexes as the Geneseo mound and Sea Breeze components afford, solely from progressive Hopewellian decline. Logically, on this hypothesis, the Point Peninsula Focus,

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[1]Black, 1933.

[2]Cole and Deuel, 1937.

[3]Willoughby, 1922.

[4]The differentia of the Woodland Pattern have become more clearly drawn as the result of the Woodland Conference held at the University of Chicago in May, 1941. (See "American Antiquity," Vol. VIII, No. 4, pp. 393-400).

Plate 102. Flexed Adult Burial (Number 3) in Geneseo Mound
New York Focus, Hopewellian Phase

Note four-inch elevation above mound floor, fragment and depression of trophy skull (?) in foreground, and burned floor area.

with its heritage of Hopewellian reminiscences, would represent a still more advanced stage of degeneration.

Other Mound Components in Western New York

The very inadequate accounts of mounds dug in New York state and the difficulty of tracing Hopewellian distribution from surface evidence renders uncertain the spread of this culture, as shown on Plate 91. Curved-base platform pipes, flat copper celts, chalcedony points and flake knives have mainly been relied on as markers. A few mounds, opened in recent years, or concerning which some probability of Hopewellian provenience exists, are included and described as fully as possible below.

Murray Hill Mound (Plate 91, site 3)

Directly opposite Squawkie Hill, on the south side of the Genesee River, Livingston County, the shell of a mound about 30 feet in diameter stands on the grounds of the Mount Morris Tuberculosis Hospital. From a stoned-up grave within it is reported to have come, among other objects now forgotten, a platform pipe, similar to the specimen from Mound 1, across the river (Plate 92, fig. 11).

Liddydyke Mound (?) (Plate 91, site 2)

In the late spring of 1933, heavy rains and woodchuck activity caused the sloughing of a portion of the edge of the high sand terrace overlooking the Smoky Hollow section of the Genesee River gorge, on the farm of William Liddydyke, situated on lot 1, township of Leicester, Livingston County, exposing the closely clustered and much-decomposed remains of several adult individuals, apparently interred in a low, eroded mound. Close to the bones, and arranged in tiers, occurred 85 rude, thick, cache blades of dark gray Onondaga chert, like those from the Squawkie Hill and Geneseo mounds (Plates 97, fig. c; 106, figs. 48-58). Near this cache was a second, similarly arranged, of 13 trianguloid cache blades or knives of argillite, ranging from about 5 to 7 inches in length, and approximately 3 inches in breadth. Further digging in the vicinity of the bones by members of the Liddydyke family brought to light still a third cache of 67 pieces, similar in type to those first mentioned, but like the

Plate 103.

Excavation of Geneseo Mound
New York Focus, Hopewellian Phase

Rock-covered central burial (arrow 1), empty adjacent tomb (arrow 2), flexed burial just above mound floor (arrow 3), portion of trophy skull (?) (arrow 4), burned mound floor (arrows 5), hearths in floor (arrows 6), large post-mold (arrow 7), cruciform sod-stripped reference bands (arrows 8).

second, of exotic material, in this instance chalcedony of a light gray color with diffuse smoky inclusions, thought by some geologists to have been quarried in the lower St. Lawrence area.

Atop the heap, which was arranged in tiers like the two preceding, with what was described as a brown pigment-like substance between the layers, had been placed a flat copper celt, some 4 inches long, with expanded bit, of the kind illustrated from Squawkie Hill (Plate 93, fig. c), a 6 inch, double-pointed copper awl, round in section, and a highly symmetrical and polished adze, about 4 1/2 inches in length, made from a brown stone, possibly flint.[1]

The provisional identification of this site with the Hopewellian Phase in New York, rather than with the Point Peninsula, depends upon the alleged occurrence of a mound;[2] the rude, thick type of cache blade, invariably produced by mounds in the New York area attributed to or of suspected Hopewellian provenience; and the Hopewellian type of copper axe. To be sure, cache blades of this order are recorded for the Kipp Island graves, which also yielded argillite in the form of blades and projectile points, and the Port Maitland and the Sea Breeze burials, the latter having other Hopewellian affinities; while a flat copper axe (not seen by the writer) is said to have accompanied the Muskalonge Lake cache of thin blades. Thus, while the Liddydyke site may actually pertain to the Point Peninsula Focus, and especially to the stage thereof most heavily under Hopewellian influence, best represented by the Sea Breeze station, the writer inclines to the opinion that it is more closely related to the Squawkie Hill and Geneseo mounds of the latter culture.

Kipp Island Mound (Plate 91, site 7)

The remnant of a much dug over mound, about 43 feet in diameter and 22 inches in maximum height, is to be seen on the west side of Kipp Island, Cayuga County, a little north of the point where the Clyde River joins the Seneca, and less than 50 feet east of the island's edge, on the gentle slope. Trenched by the Rochester Museum in 1940, it was found to consist of clay loam bearing numerous charcoal granules, occasional fire-broken stones, broken animal bones, numerous rude potsherds comparable with those from the Genesee Valley tumuli, and 4 rude cache blades. The floor consisted of a reddish brown sandy clay, exhibiting traces of an old soil line in places.

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[1]Save for a few of the chert cache blades, this material is in the collection of Mr. Joseph J. Quinlan, Dansville, New York. As it is mounted under glass exact size and the composition of the adze could not be determined. The writer further acknowledges his appreciation of Mr. Quinlan's notes on this find which supplement his own, based on the report of the discoverers.

[2]No traces of a mound remained when the locus was examined by the writer shortly after the find was made, the whole portion having slid or been shoveled down the slope.

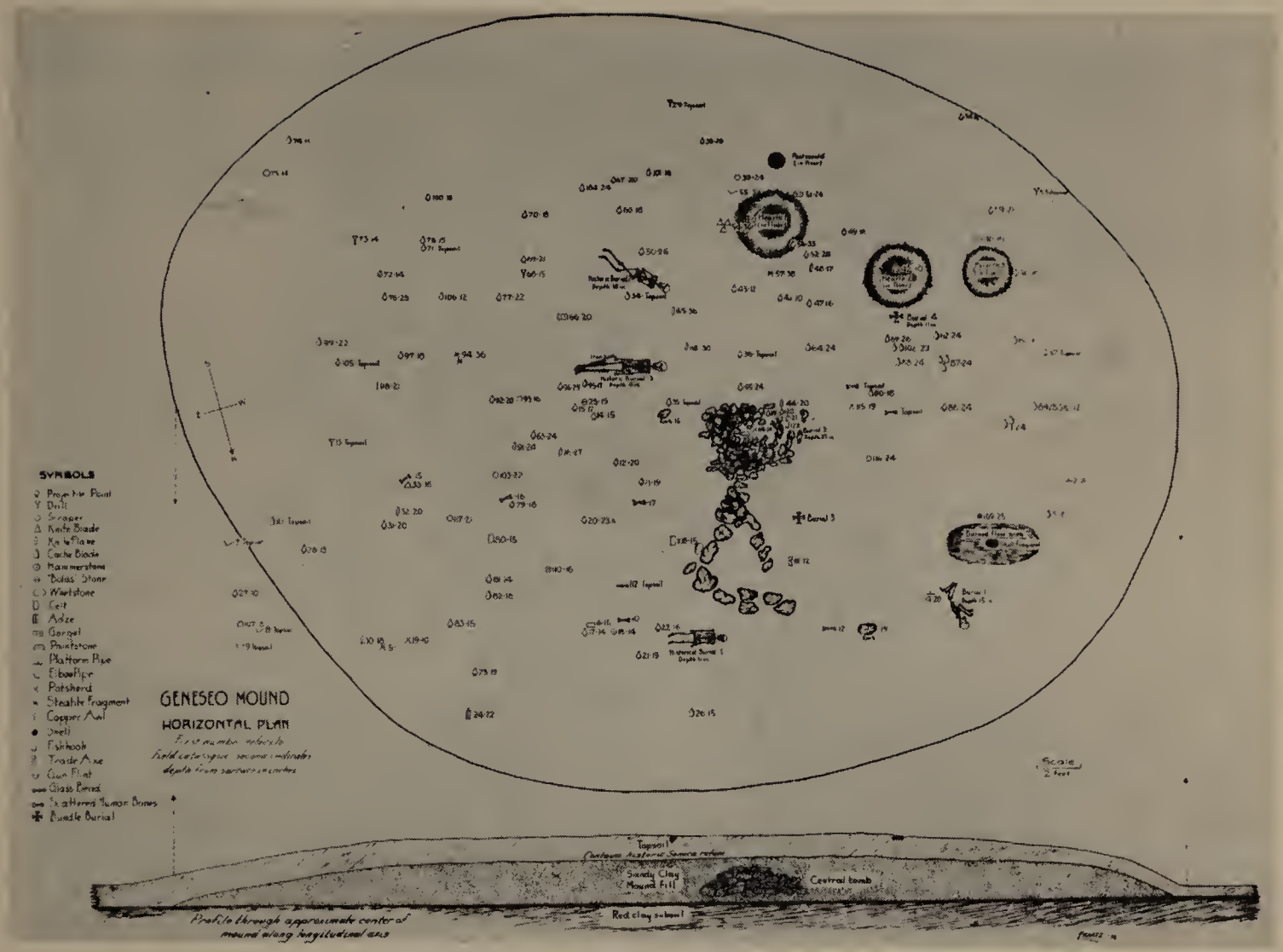

Plate 104. Plan of the Geneseo Mound
Showing Distribution of Features and Artifacts
New York Focus, Hopewellian Phase

Upon this dark basal member a greatly decomposed skeleton was found, in the flexed position, head to the east. A rude cache blade, well polished celt, several small sheets of mica, a lump of rotted iron pyrites, and a broken side-notched point, apparently a strike-a-light, lay beside it.

Mr. Maynard A. Cramer of Auburn, has found several burials in this mound, together with the following grave goods: a rectanguloid stone pendant; several thick cache blades; several thick, crude, side-notched projectile points; and 5 large bear canines, 2 rubbed flat on both sides, 2 on one side only, all perforated into the root canal through the center of one side and vertically at the apex (like fig. 4, Plate 65), and one truncated obliquely a little above the enamel line.[1]

Cremated human bones and rude cache blades were previously taken out by Mr. Carl Armbruster, a local resident.

Bamber Mound (Plate 91, site 6)

On the north bank of Oak Orchard Creek, about 2 miles from Lake Ontario, on the Bamber Farm, in Orleans County, is a conical mound approximately 40 feet in diameter and 7 feet high, composed of sandy loam and layers of ash and gravel. It is said to have contained a stone cist in which human bones were found accompanied by objects of unascertainable character. In recent years, many rude cache blades, a gorget, notched projectile points, a celt, and pitted hammerstones have been dug from remaining undisturbed portions.

About 50 feet distant, a copper spearhead, 8 1/4 inches long and 1 3/16 inches wide, with spatulate tang and medially ridged blade, was allegedly picked up and is now in the Rochester Museum, through the generosity of Dr. Charles S. Craig of Hilton, New York. It may be of interest to note that a socketed copper spearhead, 5 inches long, now also in the museum, is said to have been found in the immediate vicinity of the Squawkie Hill mounds.

Kane Mound (Plate 91, site 1)

About 4 miles east of Gowanda, Cattaraugus County, on the Walter Kane farm, Zoar Valley Road, is a mound some 20 feet in diameter and 4 feet in elevation. It lies on a hillside, is of sand, and yielded to the shovel of Mr. Kane four flexed burials. Associated there-

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[1] This closely resembles specimens from the Hopewell group in Ohio (Moorehead, 1922a, Fig. 53, d).

Plate 105. Restored Pottery Vessel
Geneseo Mound
New York Focus, Hopewellian Phase
Height 6 3/4 inches

Coarse grit-tempered ware, elongated body, conoidal base, slightly constricted neck and everted rim, flat outsloping lip, rude cord-wound-stick decoration over entire surface.

Plate 10o. Representative Artifacts from Geneseo Mound
New York Focus, Hopewellian Phase

1, expanded base drill; 2, side-notched drill; 3, 4, straight drills; 5, triangular scraper; 6, 11, points with battered end; 7, 10, points with curved or straight knife-like end; 8, prismatic flake knives; 9, copper awl; 12, 14-16, broad side-notched points; 13, triangular points with concave base; 17, 19, narrow side-notched points; 18, 20, 21, narrow stemmed points; 22, triangular point with straight base; 23, fragments of rectangular gorget; 24, fragments of conch shell container; 25-31, semilozenge-shaped points; 32, portion of ellipsoidal gorget; 33, obtuse angle elbow pipe; 34, miniature platform pipe, bowl excavated but no stem hole; 35, straight-base effigy platform pipe; 36, 37, 47, 52, thick, cord- or fabric-impressed potsherds; 38-40, thin triangular knives; 41, 42, thin lanceolate knives; 43, fragmentary point; 44, pebble hammerstone; 45, rectanguloid celt; 46, trianguloid plano- convex adze; 48, broken cache blade; 49, 53-58, rude cache blades; 50, hematite paintstone; 51, abradingstone with worn and incised surface; 59, pitted hammerstone; 60, bolas-stone; 61, incised steatite potsherd.

Material: All chipped stone articles of gray or mottled gray and brown Onondaga chert, except 8, of red and white chalcedony; 16, exotic brown chert; 43, cream-colored chalcedony; 48, yellow jasper. Fig. 23, slate; 32, 34, steatite; 35, fine-grained greenish sandstone; 45, granite; 46, "greenstone"; 44, 51, 59, 60, sandstone.

with were 16 of the same rude cache blades, characteristic of New York mounds and suggestive of the larger blades from Hopewellian tumuli of Ohio[1] and elsewhere, tubular copper beads, and two copper dish-shaped objects, about 3 inches in diameter, with perforated rims.

Orient Focus, ? Aspect, ? Phase, ? Pattern

On Long Island, particularly the eastern half, it has long been recognized that certain rare surface traces, chiefly steatite potsherds and a distinctive type of narrow-bladed, side-notched, bifurcated-based arrowpoint, were not attributable to the shell middens of the Coastal Aspect, but not until 1935 could they be culturally identified. In that year Mr. Roy Latham, an officer of the Long Island Chapter, New York State Archeological Association, added a new culture complex to the growing list in New York, when he discovered, almost without surface clues, two remarkable burial sites on sandy hilltops overlooking Long Island Sound, near Orient, on the north fork of the island.

The first site yielded 25 circular pits, 35 to 53 inches in depth, at the bottoms of which caches occurred containing steatite vessels; quartzite and slate projectile points, with relatively long narrow blades, side notches, and flaring concave bases (Plate 107, figs. 4-9); spearheads or knives of the same shape, made of chert, jasper or argillite (Plate 107, figs. 13-17); perforators; crudely chipped rectangular celts (Plate 107, figs. 25-27) and plano-convex adzes of felsite; rubbed pieces of hematite (Plate 107, figs. 32, 33) and pebbles of graphitic or carbonaceous shale (Plate 107, figs. 28-31), employed for paint stones; ellipsoidal two-holed gorgets, some engraved (Plate 107, figs. 1-3); rude cylindrical pestles (Plate 107, fig. 24); and lumps of decomposed iron pyrites, probably pertaining to fire-making sets.

Remarkable uniformity of type prevails in all the artifacts except the steatite pots, and these present a wide diversity in shape and size, ranging from flat-bottomed, low-sided utensils to bowl-shaped receptacles, oval to rectangular with rounded corners, and from 6 to 17 1/2 inches in length. Most are lugged and have the rims decorated by transverse scorings. Without exception they have been "killed," either by knocking a small hole through the bottom, or by breaking the vessel into fragments (Plate 108).

"The objects," says Mr. Latham, speaking of site 1, "were neatly arranged in the pits, and would average about one steatite utensil, one celt, one knife, one each of red and dark pigment stones, and eight quartzite arrowpoints to a cache. Drills, pestles, gorgets, and other odd pieces, were not of regular occurrence, but the remains of fire-making sets were found in all."[2]

The second site, distant 1/8 mile from the first and overlooking the Sound from an elevation of 170 feet, had at its summit, as related by Mr. Latham, "a large oval pit, 20 x 30 feet, the long axis east and west, with two large fireplaces at each end. The depth to these

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[1]Mound 2, of the Hopewell group, produced about 8,000 disks (Moorehead, 1922a, p. 95).

[2]By correspondence of May 5, 1936.

Plate 107

Stone Artifacts
Sites near Orient, Long Island
Orient Focus

1-3, gorgets; 4-9, quartzite arrowpoints, with characteristic bifurcated or "fish-tail" base; 10, gorget fragment; 11, circular pendant; 12, tubular bannerstone, with one flat and one concave surface; 13-17, points of chert, jasper and argillite, with bifurcated base; 18, double-notched point; 19, grooved axe; 20, celt, reworked from pestle; 21, 22, grooved adze (two views); 23, 24, rude pestles; 25-27, rude rectangular celts; 28-31, graphitic paintstones; 32, 33, hematite paintstones.

Drawn from photographs provided by Roy Latham, Orient, New York.
Collection of Mr. Latham.

hearths was more than 60 inches. The hearths contained a few firestones, much charcoal, and a quantity of fragmentary calcined bones, which were determined at the Rochester Museum of Arts and Sciences as representing at least two cremations of human subjects. Between and around these large crematory hearths were scattered many stemmed quartzite and slate arrowpoints; large side-notched blades of chert and jasper; a few drills; a small plano-convex adze, grooved on the convex side; a two-holed gorget; and several one-holed disk pendants (Plate 107, fig. 11). In addition to these a great many sherds of steatite were taken from the pit."[1]

Among the most significant finds in this pit were 3 deposits of red ochre, or powdered hematite. The largest mass, containing about 2 bushels of the pigment, was spread over a space on the floor approximately 4 feet in diameter, to a maximum depth of 14 inches. About it lay calcined human bone fragments; steatite sherds; plano-convex adzes, one of them grooved across the back (Plate 107, figs. 21, 22); celts; a small gouge; a decomposed lump of iron pyrites; a flint spearpoint or knife blade, 6 inches long (Plate 107, fig. 18); and many quartzite and slate arrowpoints.

Five feet distant from a fireplace walled with stones, in the large excavation, but without the limits of the latter, a very deep pit was encountered in which three separate deposits occurred, as follows: (1) a fire-making set, 2 hematite paintstones, a celt, a large jasper knife, and several fine quartzite arrowpoints; (2) a lump of decomposed pyrites, a number of quartzite arrowpoints, and a chert knife; (3) a small quantity of ground hematite with a rubbed piece of hematite on top. Near this had been placed two small groups of pebbles, each pebble averaging about 1/4 inch in diameter.

The only uncremated burial from the site lay in a basal fossa in an 8 foot grave shaft, and was covered over with white quartz sand. Although in an advanced state of disintegration, the few long bones, ribs, and superimposed skull fragments, compressed into a space 16 x 11 inches, suggested a bundle burial. Over the cranial pieces rested a large steatite sherd which was found to fit with other similar sections scattered over the floor of the main grave pit. A few inches to the south and on a level with the sherds, the white sand of the subsoil was mixed with charcoal granules and red paint, beside which, and stained with the latter substance, reposed a completely grooved axe, 7 1/2 inches long (Plate 107, fig. 19). Near one end of the skeletal remains half a pestle occurred; at the opposite end the second half was found (Plate 107, fig. 23). On the east side of the bones, in a deposit of yellowish sand (this variety of soil was often encountered in the pits and may have been brought in for ceremonial reasons) lay 3 celts, 2 hematite paintstones, 13 quartzite arrowpoints, a large jasper point or knife, a slate drill, and 20 steatite sherds.

Other small pits scattered about the large pit produced a total of 5 two-holed gorgets (one of steatite), 2 of them engraved; several disk-shaped ornaments of clay stone; a fine-grained greenish sandstone tubular bannerstone, oval in cross section, with faint lateral projections, and one grooved side (Plate 107, fig. 12); and many of the commoner types already enumerated from both sites.

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[1] By correspondence of May 5, 1936.

Plate 108.

Steatite Vessels
Sites near Orient, Long Island
Orient Focus

Note that all have been "killed" by knocking a hole in the bottom.
Drawn from photographs provided by Roy Latham, Orient, New York.
Collection of Long Island Chapter, New York State Archeological Association.

In most of the caches on both hills, a black material, not charcoal, was observed, and it appears that this represented the decay of some unknown organic substance or substances

A third site of this horizon was discovered in 1937 by Mr. Latham and Mr. Charles F. Goddard, president of the Long Island Chapter, on Sugar Loaf Hill, in the Shinnecock Hills on the south fork of eastern Long Island.

The principal feature was a large oval pit, with a length of 30 feet, a breadth of 23 feet, and a depth of 7 feet 4 inches, very similar to the one on Hill 2, at Orient. On the floor near the center and again near the north end were deposits of red ochre surrounded by crematory hearths filled with bits of calcined bone and associated with offertory caches similar in character and constituents to those from Orient. Some of the steatite was, however, very much disintegrated. Another, and more important difference, was the presence in the north section of some 25 clay potsherds representing probably two vessels of pointed-bottomed, straight-sided type, fabricated of hard, grit-tempered, reddish yellow to brown ware, and cord- or fabric-wrapped paddle-marked over the entire outer surface. All save two were found intermixed with steatite pot fragments, at or above the 2 1/2 foot level. The exceptions were one large piece found 48 inches deep beside a steatite fragment and another in a typical cache on the bottom (7 feet 4 inches deep). This ware is said by Latham to differ from shell midden pottery.

Two other similar but much smaller pits were found nearby . The larger and more important, 6 x 11 x 7 feet, bore a deposit of red paint on the bottom. The north half of the floor was shingled with the fragments of 4 or 5 steatite receptacles. In an associated cache occurred celts, pestles, paintstones, a gorget, and over 30 arrowpoints.

In December, 1940, a fourth component of this culture was found by Mr. Latham[1] and other members of Long Island Chapter, similarly situated on the summit of a prominent sand hill, overlooking the Sound, at Jamesport, some 20 miles west of Orient.

Here again was a large main pit, elliptical in outline, approximately 18 x 30 feet, with a maximum depth of 8 feet 6 inches below the surface. On the floor near the eastern end occurred a circle of large stones about 5 feet in diameter, several of the slabs 3 inches thick, set in a vertical position. Within lay a fireplace containing burned human bones and a cache consisting of a large number of projectile points, knives, paintstones, and portions of at least two steatite pots. Elsewhere over the floor of the pit were encountered other crematory hearths, caches of implements, powdered red hematite, and decomposed iron pyrites.

At the time of writing, this pit, about two-thirds explored, had already produced 250 points, mainly of the narrow fish-tail type, for the most part made of white quartzite, but a few of chert, slate and argillite; several broad side-or corner-notched knives (?); 10 stemmed, side-notched or expanded-base drills; 12 rude rectanguloid celts; 6 narrow plano-convex adzes; 2 fully grooved axes; 3 narrow ellipsoidal gorgets, one with 3 perforations; 6 hematite and 30 graphite paintstones; several lumps of iron pyrites; and 45 steatite vessels, all broken or "killed," some badly disintegrated, but most in restorable condition. Six sherds of grit-tempered, cord-impressed pottery, one a rim bearing a knob an inch below the lip, occurred associated with the other objects in the pit.

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[1] By correspondence of January 29, 1941.

Mr. Latham[1] doubts that these large, deep, oval pits, sunk on sandy hilltops, are parts of subterranean houses. No post-molds have been noted; the floors, on which rest the caches and crematory hearths are otherwise clean sand, devoid of all food or industrial debris, which, indeed, is completely lacking from the surrounding area. Except at the bottom, little or nothing occurs in the pit. The lower half of the fill is described as being stained with charcoal, the upper half as almost "pure" sand, the pit line terminating at the topsoil.

Evidently in most cases cremation was accomplished in situ, the remains being probably a bundled skeleton.

None of the sites of this culture, referred to as the Orient Focus of an undetermined aspect, phase, and pattern, have yielded any bone, shell, or metal work. Two small heaps of pebbles found in a cache at Orient suggest the possibility of shell rattles having decayed there. The complex as a whole is different from the probably later shell midden-making Coastal Aspect, found in the vicinity and elsewhere; and from the similarity both of type and material with the surface-derived artifacts from southern Connecticut and Rhode Island and the absence thus far of Orient traces from the western half of Long Island, it seems rather certain that the Orient Focus was an importation in toto from across the Sound.[2] Yet, insofar as is known, nothing comparable with the important Orient cemeteries has ever been found elsewhere, although they may exist in lower New England.[3] Suggestive resemblances, chiefly in the manner of occurrence, are to be noted between the Orient components and two New Jersey sites. The first is situated about 15 miles in an air line south of Trenton, on a small branch of Rancocas Creek, a tributary of the Delaware, some 6 miles from that river, and midway between the towns of Medford and Masonville.[4]

The stratigraphy consists of three members, viz.: (1) an upper black soil layer, 6-8 inches thick, supporting a hardwood forest, and yielding grooved axes, notched points of siliceous stones and argillite, potsherds, and other artifacts tentatively attributed to the Delaware; (2) yellow sand, 4-6 feet in depth, probably of eolian origin, traversed by "red bands," bearing cedar stumps, and 2 feet from the top scattered argillite points similar, except for a few, to those found below, but less weathered, a drill, and crude potsherds; and (3) white glacial sand, from the surface of which a number of cache pits and fire pits had been dug. The former were arranged about 6 feet apart in 3 roughly parallel rows, some 12 feet distant from one another, about a large fire pit. Each contained one or more bannerstones, points, etc. Beyond

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[1]By correspondence of February 22, 1941.

[2]The writer was able to examine the material in Mr. Latham's possession in 1935, and everything found subsequently in September, 1941.

[3]The failure to find habitation sites of the Orient culture on Long Island, although shell midden and pit sites with associated burials of the Coastal Aspect occur in considerable numbers, suggests the possibility that the eastern end of the island was visited by groups of the Orient culture, resident across the Sound, solely for the purpose of disposing of their dead in a complicated funereal ritual.

[4]Hawkes and Linton, 1916.

the area of their occurrence were scattered small fire pits or hearths, and about them argillite points and fire-broken stones, suggesting the location of the camp site.

The chipped implements from the lowest level are all of argillite, except for one large quartzite point, and have deeply decayed surfaces. The commonest type is stemmed with sloping shoulders or semilozenge-shaped; the next most abundant is lozenge-shaped. Most have fairly broad blades, but very broad and very narrow blades also occur. Twenty-one perforated and winged bannerstones of fine workmanship came from the caches. Associated with them, in addition to the points, were chipped rectangular argillite celts, crude pear-shaped celts, a flat-tanged adze, crude chopper-like tools, unpitted hammerstones, fossil brachiopods retaining traces of red paint, a pecked and polished quartz crystal ball, and other lesser articles.

At the base of Sugar Loaf Hill, in Red Valley, in adjacent Monmouth County, the State Indian Site Survey excavated, between 1936 and 1938, a site bearing some resemblance to the foregoing.[1] The soil consisted of stratified sand, comprising first, a much weathered and oxidized reddish brown member, 1 to 3 feet in thickness, underlain by unoxidized white sand, streaked with "red veins" and extending to a depth of 5 feet. Artifacts occurred throughout the reddish sand but mainly in the upper half, and in this stratum 15 faintly defined pits with meager contents were traced and several caches of hammerstones and rude cache blades were found.

More interesting were 11 deeply buried caches, 36 to 58 inches below the surface and usually in or on the white sand, which consisted of various combinations of the following artifact types: bipennate bannerstones, stemmed spearheads with broad or narrow blades, an arrowpoint, a gouge, a grooved axe, a knobbed celt, and a pestle, all conforming typologically with artifacts from the other portions of the site. In one cache fragmentary human (?) teeth occurred, raising the question whether these, as well as the markedly similar features of the first mentioned Rancocas Creek site, may not actually represent burial offerings in graves from which the osseous matter has decayed.

A slight similarity is also to be noted between the Orient Focus and the Red Paint culture of Maine. Both evidently practiced cremation in oval grave pits and employed hematite paint both in powdered and crayon form; pyrites fire-making sets; plano-convex adzes, plain and grooved; and gouges. However, nearly the same can be said for the Point Peninsula Focus which, although it lacks the gouge and grooved adze, provides the semilozenge-shaped point, steatite pot, and gorget.

Somewhat closer parallels may be drawn with the "Early" Focus of the Coastal Aspect, wherein the grooved axe, gorget, rude celt, and adze are found; and a very small percentage of the typical narrow bifurcated base Orient points occurred on one site.[2] Still, the relationship seems remote and after further communication with Mr. Latham on this matter,[3] it may be expedient to sever even the tentative connection between the two, expressed previ-

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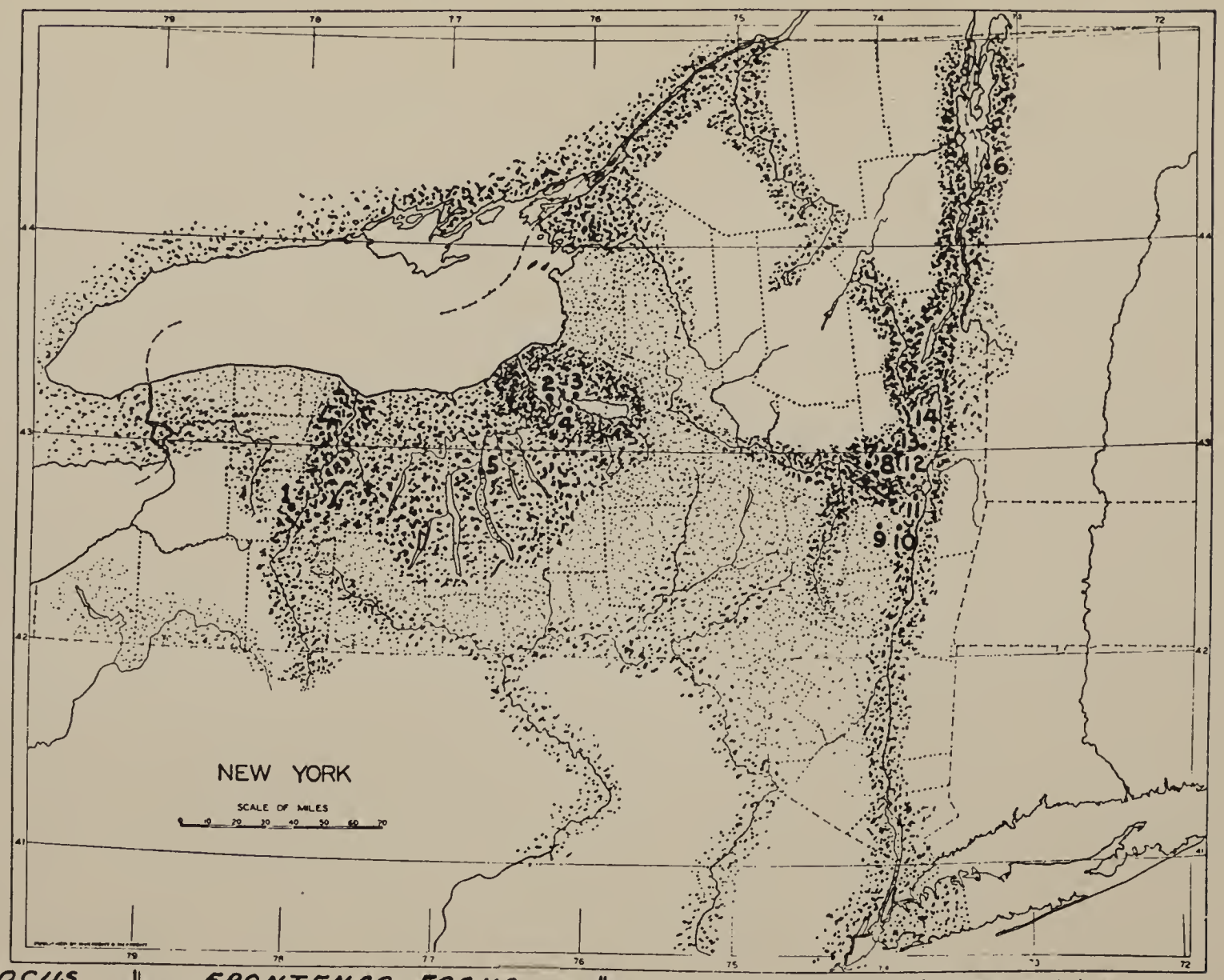
[1]Cross, 1941, pp. 117-127.
[2]Skinner, 1919, Pl. VI, g′, h′, i; p. 64.
[3]April 8, 1941.

MAJOR COMPONENTS AND DISTRIBUTION OF THE LAURENTIAN ASPECT AND FRONTENAC FOCUS, UNNAMED ASPECT*



BREWERTON FOCUS
1. Smoky Hollow, Wyoming Co.
2. Candee Site, Oswego Co.
3. Oberlander Site " "
4. Robinson Site, Onondaga Co.

FRONTENAC FOCUS
5. Frontenac Island, Cayuga Co.

VERGENNES FOCUS
6. Vergennes, Vt.

VOSBURG FOCUS
7. Clapper Site, Schenectady Co.
8. Wurz Site " "
9. Vosburg Site, Albany Co.
10. Covered Bridge, " "
11. Dunsback Ferry, Albany Co.
12. Round Lake, Saratoga Co.
13. Manning Site, " "
14. Fitch Site, " "

* Known from one site (No. 5) only

Plate 109. Major Components and Distribution of the Laurentian Aspect and Frontenac Focus, ? Aspect, ? Phase, Archaic Pattern

iously by the writer,[1] and consider the Orient a "floating" focus, possibly partly coeval with the "Early" Focus, Coastal Aspect; the Laurentian Aspect; and the early Middlesex Focus (see Plates 1, 4).

Laurentian Aspect, ? Phase, Archaic Pattern

Although surface traces indicate it to be one of the most widespread and important of the older northeastern cultures and by far the preponderant occupation throughout New York state,[2] the Laurentian Aspect, named from its apparent center in the middle St. Lawrence Valley, was not defined until the fall of 1937, and is still in process of elucidation. By a strange and happy coincidence three institutions independently excavated stations of what may be three foci of this manifestation, in the summer of that year. A fourth focus has been tentatively defined from a plentitude of surface evidence, rendered intelligible in the light of the excavated material. The participating agencies are Phillips Academy, Andover, Massachusetts; the Rochester Museum of Arts and Sciences; and the Champlain Valley Archeological Society. Members of the Van Epps-Hartley Chapter, New York State Archeological Association at Schenectady, are largely to be credited for the surveys leading to the definition of the fourth focus.

The Rochester Museum's pertinent contribution came as the result of several years of search for a site capable of demonstrating the cultural provenience of certain industrial remains recovered solely as surface finds over much of New York, lower Ontario, western Vermont, and elsewhere in the northeast. The lack of sub-surface concentration was ascribed to the hunting-fishing economy of the makers with its attendant nomadism. Whether one or more occupations was indicated the clues did not disclose.

Brewerton Focus

During the summers of 1937 and 38, the Rochester Museum's field party partially excavated two large village sites, each several acres in extent, lying on opposite shores of the Oneida River, close to its source in Oneida Lake, and just outside the town of Brewerton (Plate 109, sites 3 and 4), where at last the enigmatic culture was literally run to earth. The

[1] Ritchie, 1938b, pp. 104-105.

[2] Surface surveys and the examination of collections over the greater part of the state reveal a heavy predominance of chipped stone implements attributable to this manifestation. The quantity of such material, found especially in the river and lake valleys of the western, central, northern, and eastern areas (see Plate 3), is very great and testifies to long tenancy.

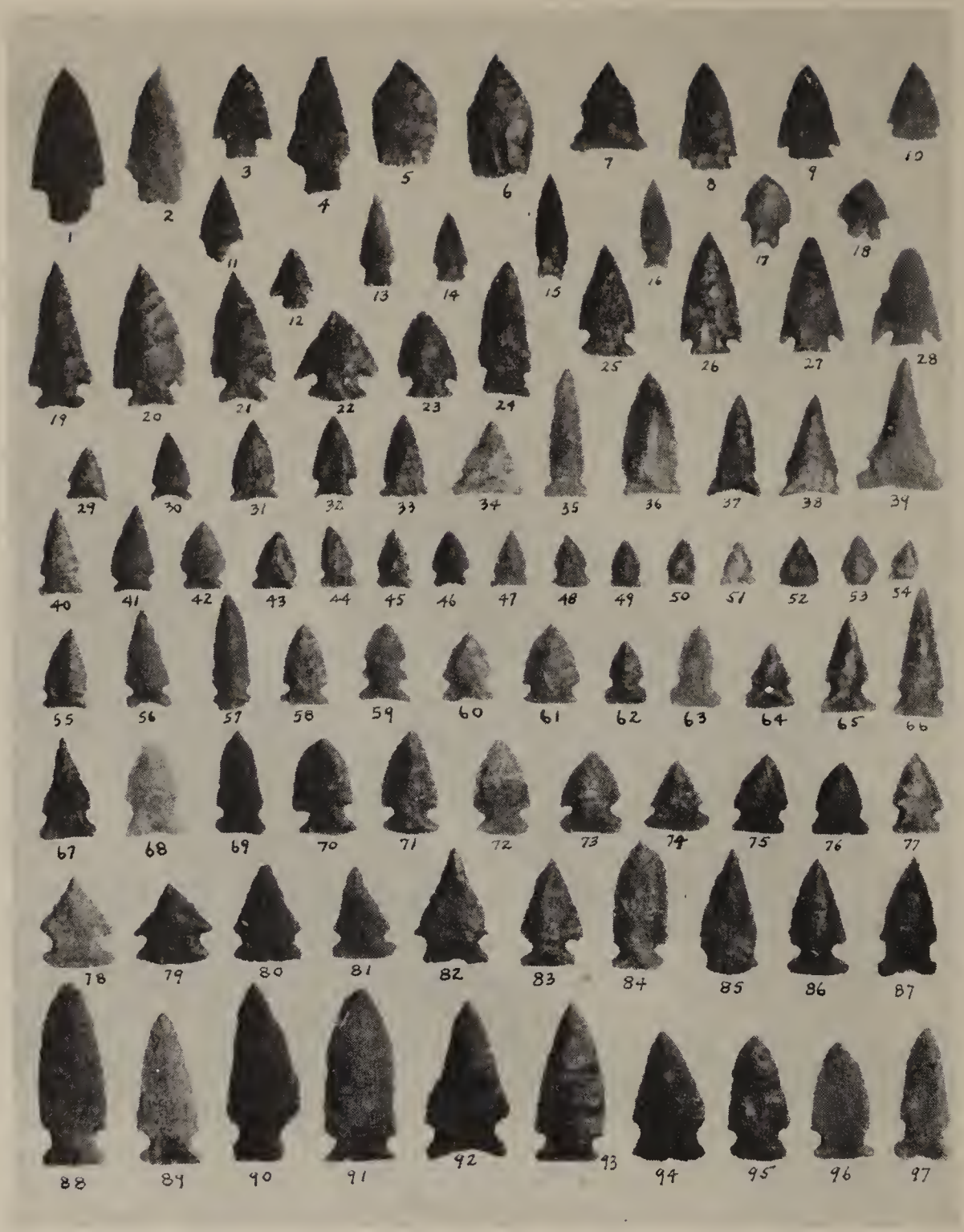


Plate 110.

Projectile Point Types
Robinson Site
Brewerton Focus, Laurentian Aspect

1-3, broad stemmed points; 4, semilozenge-shaped point; 5, 6, pentagonal-shaped points; 7, notched pentagonal-shaped point; 8-10, 19-28, corner-notched points; 11, 13, 14, narrow stemmed points; 15, 16, bifurcated side-notched points; 17, 18, bifurcated stemmed points; 29-39, eared side-notched points; 12, 40-97, broad side-notched points (57-59 have multiple notches).

Material: All of local Onondaga gray chert except 2, 63, 88, 89, 97, of argillite; 26, 80, jasper; 68, quartzite; 96, slate.

Plate 111. Chipped Stone Artifacts
Robinson Site
Brewerton Focus, Laurentian Aspect

1-13, 21-26, eared triangular points; 14, 16, 17, 19, triangular points, with straight base; 15, triangular point, with convex base; 18, 20, triangular points, with concave base; 27, drill, based on rough spall; 28, drill or reamer, from flake worked on one face; 29, 32-34, drills, with expanded base; 30, 31, straight drills; 35, drill, with T-shaped base; 36, 38, drills, with T-shaped eared base; 37, drill, with expanded side-notched base; 39, 40, triangular end scrapers; 41-43, side-notched end scrapers; 44, crescentic end scraper; 45, stemmed end scraper; 46, side-notched side scraper; 47, 48, side scrapers, from retouched flake; 49, 50, 52-55, 65, ovate end scrapers; 51, keeled-back end scraper; 56, 57, 67, 68, ovoid cache blades; 58, 73, ovate knives; 59-61, 63, 64, 71, knives from retouched flakes; 62, round end scraper; 66, section of lanceolate blade, with parallel flaking; 69, lanceolate knife; 70, trianguloid knife; 72, knife, from thick, retouched, prismatic flake; 74, thick spall; 75, worked pebble.

Material: All regional Onondaga gray chert except 1, 65, 70, 75, which are of quartzite; 2, 41, 73, jasper (73 has white patination); 33, 69, argillite; 38, exotic chert.

definition of the Brewerton Focus, Laurentian Aspect, has resulted from this work.[1]

Components of the Brewerton Focus

Robinson Component (Plate 109, site 4)

On the Robinson site, on the south side of the river, dug through the courtesy of Mr. and Mrs. Channing Robinson, the black refuse-laden soil varied from about 18 to 32 inches in depth, but because of its acidity (pH 5.99) little osseous material had been preserved, beyond the faint traces of 7 human skeletons (4 apparently flexed, one bundled, one cremated, and one, probably intrusive, in an extended position) encountered at or near the base of the refuse mantle, and unaccompanied by artifacts. A series of 9 trenches, covering 8,400 square feet, put through different parts of the site, revealed 15 nearly sterile pits, many hearths and 1,777 objects, mainly of chipped stone (78% of total artifacts), embracing hundreds of projectile points of the familiar but previously unattributed broad-bladed, notched and stemmed forms (Plate 110); together with a smaller number of unanticipated triangular points, prevailingly with convex edges (Plate 111, figs. 14-20);[2] two unusual styles, which have provisionally been termed "eared notched points" (Plate 110, figs. 29-39) and "eared triangular points" (Plate 111, figs. 1-13, 21-26); drills of several patterns (Plate 111, figs. 27-38); oval, triangular, and notched scrapers (Plate 111, figs. 39-55, 62, 65); and other types illustrated on Plate 111. Apart from a few examples of exotic jasper, quartzite, argillite, and chert (see plate captions), the chipped stone objects were fabricated from Onondaga chert obtainable some 15 miles to the south. Of rough stone tools, comprising 14.4% of the total inventory, there were found choppers (Plate 112, figs. 5-9, 11), notched netsinkers (Plate 112, fig. 4), both plain and pitted hammerstones (Plate 112, figs. 16-21), anvilstones, cylindrical and conical pestles (Plates 112, figs. 12, 13), whetstones (Plate 112, figs. 1, 2), and a plummet (Plate 112, fig. 10). Polished stone artifacts (only 2.8% of all objects) include gouges of short broad form (Plate 113, figs. 32-38); winged bannerstones of three types, oval, rectangular and trapezoidal in outline (Plate 113, figs. 16, 25-28); and a few celts and plano-convex adzes (Plate 113, figs. 29-31). Composed of native copper are a gouge (Plate 113, fig. 20), celt with flaring bit (Plate 113, fig. 17), and 20 awls and gorges (Plate 113, figs. 18, 19). A small number of potsherds (179, not included in total of artifacts from site) came from scattered points in the upper half of the deposit (4-15 inches), only one being found deeper in a pit.

They are evidently derived from two styles of vessels, both grit-tempered, one a straight-sided form, cord-malleated on both surfaces and only rarely embellished with small punctate impressions (Plate 113, figs. 1-3; 114, figs. 117-122); the other with slight neck con-

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[1] Ritchie, 1940.

[2] De Laguna has pointed out the close similarity of this variety of the triangular point to a characteristic point type of the Dorset culture, the oldest known Eskimo culture in eastern Canada (Ms.).

Plate 112. Rough Stone Artifacts
Robinson Site
Brewerton Focus, Laurentian Aspect

1, 2, well-worn abradingstones; 3, hematite paintstone; 4, notched netsinker; 5, irregular chopper; 6, amygdaloid chopper; 7, hoe-shaped chopper; 8, 9, rectanguloid choppers; 10, plummet, grooved around and over top; 11, oval chopper; 12, conical pestle; 13, section of cylindrical pestle; 14, thick netsinker, with grooved sides; 15, muller; 16, 17, combined mullers and hammerstones; 18-21, unpitted pebble hammerstones.

Material: All of sandstone except 16, of quartzite; 18, gneiss; 19, 21, chert; 20, gabbro.

Plate 113. Pottery, Copper, Bone and Stone Artifacts
Robinson Site
Brewerton Focus, Laurentian Aspect

1-3, fabric-and cord-marked sherds (1, 3, outer; 2, inner surface); 4, 5, 14, dentate-stamp-ornamented sherds (4, 14, done with rocker stamp); 6, coiled basketry (?) impression; 7, punctate decoration; 8, 11, comb-trailed decoration; 9, 10, 12, inner surface, showing channeling; 13, scallop shell (?) impression; 15, flat bone projectile point (?); 16, 25, sections of oval bannerstones; 17, flat copper celt; 18, copper awls; 19, copper gorges; 20, copper gouge, possibly a reworked "spud"; 21, awl, from bear radius; 22, split beaver incisor cutting or scraping tool; 23, 24, awls, from bird and mammal long bone, respectively; 26, section of trapezoidal bannerstone; 27, half of rectangular bannerstone; 28, rectangular bannerstone, with two rounded corners; 29, 30, rectanguloid celts; 31, thin, rectanguloid, plano-convex adze; 32-38, short broad gouges.

Material: 16, 26-28, slate; 25, fireclay; 29-38, basalt.

striction, fairly smooth surface, ornamented with cord-wound stick or dentate-stamp work in linear, herringbone, or rocker-stamp design, or in one instance with comb trailing (Plates 113, figs. 4-14; 114, figs. 23-39). Corrugation or channeling is sometimes seen on the interior of the second style of ware (Plates 113, figs. 10, 12; 114, figs. 24, 30, 35, 38). (See complete trait inventory on pages 374-379).

A detailed study of the horizontal and vertical distribution of the material from the largest and most productive trench, number 5, has demonstrated a high degree of uniformity of placement, except for potsherds, already referred to; copper objects, nearly all of which came from the lower half of the deposit; triangular points of the more conventional form and the "eared" variety, which increased in frequency toward the top, but occurred at all levels; and the larger notched and stemmed forms, for which the converse was true. Interpretation of the facts suggested cultural continuity with change, due perhaps to the loss of contacts (copper), increasing emphasis on certain elements (arrow instead of javelin), and infusion of new traits (pottery).

Oberlander Component, No. 1 (Plate 109, site 3)

On the opposite or north side of the river, on the Oberlander estate, the detritus accumulation was even deeper, from 3 to 4 feet, over most of the 1,783 square feet excavated through the gracious acquiescence of the owners, Mr. Oscar Oberlander and Dr. Irving Oberlander of Syracuse, and Mrs. C. E. Nathaway of Rochester. It harbored the majority of the stone and copper types found on the Robinson farm, but in different proportions, together with a few additional forms. For example, triangular points were much less frequent (Plate 115, figs. 39-41); drills and notched scrapers far more numerous (Plate 115, figs. 1-12, 19-23, 27-33); and several aberrant flint articles appeared (Plate 115, figs. 13-18, 25, 26); as did a steatite vessel fragment (probably intrusive from the nearby Point Peninsula site, Oberlander, number 2); two broken beveled adzes, one reworked (Plate 116, figs. 10, 11); and a partially grooved oval stone (Plate 116, fig. 25). Except for two fragments, the bannerstone was lacking here, and the metal inventory was largely confined to 33 awls and gorges (Plate 116, figs. 12, 18, 19, 27). As at Robinson's, potsherds, of the same character, were met with in the upper half and more particularly in the upper third, where they were less common (106) than across the river (Plates 117, figs. 1-7, 14, 15, 20-22, 28-30 ; 114, figs. 1-16).

The most striking difference between the components resulted from the more alkaline nature of the soil here (pH 7.28), permitting the preservation of a much larger portion of the bone and antler industry and thus affording a more comprehensive picture of the material culture of the Brewerton Focus. The principal items of this category comprise awls of several sorts (Plate 117, figs. 40, 50, 51, 57-61, 69, 70, 72, 73), curved eyed needles (Plate 117, figs. 41, 42), perforated weaving (?) tools (Plate 117, figs. 31, 43-45), chipping tools, (Plate 117, figs. 64, 65, 67, 68), beaver incisor cutting instruments (Plate 117, figs. 35-39),

Plate 114. Potsherds
1-16, Oberlander Site, No. 1; 17-39, Robinson Site
Brewerton Focus, Laurentian Aspect

1-4, 17-22, sherds of style one ware, from straight-sided pots, both surfaces fabric- or cord-malleated, 17, shows punctate decoration; remaining sherds of style two ware, from vessels with slight neck constriction, smooth (6, 27, 33) or channeled interior (12, 24, 30, 35, 38), cord-wound-stick (26), dentate-stamp (5, 8, 9, 11, 13, 14, 23, 32, 37), coiled basket (?) impressed (25), comb-trailed (29), or scallop shell (?) impressed decorations (34). 8 (exterior) and 9 (interior) of rim sherd, show rocker-stamp; 13, 32, herringbone design.

unilaterally barbed harpoons with basal line hole (Plate 117, figs. 8-10, 24), double-pointed bone implements (Plate 117, figs. 46-49), antler punches (Plate 117, figs. 62, 63), deer scapula scrapers (Plate 117, fig. 16), conical antler arrowpoints (Plate 117, figs. 52-54), a bone spearpoint (Plate 117, fig. 23), and sundry articles of unknown use (Plate 117, figs. 32, 55, 66), a few exhibiting engraved decorations (Plate 117, fig. 55).

Sixteen burials were uncovered, sporadically placed at all depths in the refuse. In addition to 5 in the usual flexed position on the side, 6 bodies had been extended on the back, in one case sprinkled with hematite (Plate 120), 2 were prone among others in a pit (Plate 121), 3 were interred as bundle burials, and one was cremated. All that could be identified as a mortuary offering was a long pestle placed beneath the knees of a female skeleton (burial 7) (Plate 116, fig. 21); a bone awl with an infant (burial 14); and 3 choppers, an adze, hammerstone, and point with a flexed female (burial 15). (See trait table for this site on pages 374-379).

From the fact that a preponderance of salient artifact types occurred on both sites and repeatedly at all depths, it has been concluded that a single culture horizon is represented. The pottery seems a superadded trait, introduced during the perhaps partly coeval occupation of the villages.

Both sites represent long-tenanted settlements. Probably the dominant factor of selection was the shallows or rifts formerly existent here, where salmon, eels, and other fish could readily be speared in the spring. Along both shores of Oneida Lake and elsewhere on the Oneida and confluent Seneca and Oswego rivers, similar but smaller stations are known (Plate 109, site 2).[1]

Smoky Hollow Component (Plate 109, site 1)

An important confirmatory component of this focus came to light in Letchworth Park, Livingston County, on a high level terrace above the Genesee River, immediately north of Smoky Hollow, during the removal of a small sand knoll. There were 21 pits, 18 to 36 inches in depth and 2 to 3 feet in diameter, clustered together within an area about 20 by 14 feet, and filled with charcoal, ashes, and dark soil, according to the excavator, Mr. George W. Walker of Rochester, who recovered from them objects typologically identical with those from Brewerton, of which examples are illustrated on Plate 122. It is important to note that no pottery occurred. In the absence of a soil analysis, the lack of bone, except for calcined fragments, cannot be explained.

The authors of the Brewerton Focus seem to have been semisedentary hunters, fishers, and gleaners, utilizing the bow, javelin, and spear; the net (by inference), harpoon, gorge,

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[1] Ritchie, 1940, pp. 92, 93.

Plate 115.

Chipped Stone Artifacts
Oberlander Site, No. 1
Brewerton Focus, Laurentian Aspect

1, 2, round end scrapers; 3-5, ovate end scrapers; 6, 7, side scrapers, from retouched flake; 8, keeled-back end scraper; 9, corner-notched end scraper; 10, side-notched end scraper; 11, 12, 20-22, crescentic end scrapers; 13-15, narrow, rectanguloid blades, with parallel flaking; 16, section of blade with parallel flaking; 17, 18, sickle-shaped blades; 19, stemmed end scraper; 23, combined end scraper and perforator; 24, 34, 35, knives, from retouched flake; 25, small ovate blade; 26, drill-like artifact, with constricted center; 27, 28, straight drills; 29, 30, drills, with expanded base; 31, 33, drills, with expanded side-notched base; 32, drill, with semilozenge-shaped base; 36, ovate knife; 37, side-notched knife, with convex edges; 38, semilozenge-shaped point; 39, eared triangular point; 40, 41, triangular points, with straight base; 42, 43, notched points, with multiple barbs; 44-46, broad stemmed points; 47, 48, narrow stemmed points; 49-53, corner-notched points; 54-59, 67, 70-76, 82, 101, broad side-notched points; 60, 61, 66, 68, 77-81, narrow side-notched points (68 is asymmetric); 62-65, eared side-notched points; 69, bifurcated side-notched point.

Material: All regional gray Onondaga chert except 7, which is jasper; 8, 13, 15, exotic chert; 19, quartz crystal; 92, 93, argillite.

Plate 116.

Rough and Polished Stone Artifacts
Oberlander Site, No. 1
Brewerton Focus, Laurentian Aspect

1, notched netsinker; 2, abradingstone, with incised lines; 3, abradingstone, with deeply worn edges; 4, 14, oval choppers; 5, hoe-shaped chopper; 6, amygdaloid chopper; 7, unpitted pebble hammerstone; 8, abradingstone, with smoothed faces; 9, hematite paintstone; 10, beveled adze, showing secondary usage as anvil and sinewstone (arrow indicates faintly worn groove); 11, broken beveled adze; 12, thin rectanguloid celt; 13, rude, incomplete, stemmed plummet; 15, long, narrow gouge; 16-19, short broad gouges (the back of 19 is knobbed); 20, rectanguloid chopper; 21, cylindrical pestle; 22, muller; 23, combined muller and anvilstone; 24, bi-pitted stone; 25, muller, grooved for use as sinker (?).

Material: All sandstone except 3, which is of compact shale; 10, of unidentified crystalline rock; 11, gabbro; 15-19, basalt; 22, 25, quartzite.

and perhaps hook; and evidently, since the gouge was employed, the dugout canoe. They possessed the dog,[1] lacked the smoking pipe, and acquired pottery only late in their tenure of occupation.

Some notion of their period of habitation is afforded by the occurrence of such determinants of the Lamoka culture as the narrow-bladed projectile point (infrequent) (Plates 110, figs. 13, 14; 115, figs. 47, 48, 60, 61) and chopper (common) (Plates 112, figs. 6-9, 11; 116, figs. 4-6, 14, 20) on both the Brewerton sites, and especially, the beveled adze (2 examples) (Plate 116, figs. 11, 12) and split tine object (4 specimens) (Plate 117, fig. 66) at Oberlanders. This suggestion of a temporal overlap with the oldest known New York occupation, seems convincingly established by the finds on Frontenac Island, to be described below.

The Brewerton complex apparently diffused from an area northeast of New York, along the St. Lawrence and into the central part of the state through the plexus of rivers (Oswego, Oneida, and Seneca), as shown by vestiges on the numerous surface sites examined in an effort to discover underground deposits. There seem also to be cogent reasons for supposing diffusion from this lower Canadian region into Maine and south through the Champlain Valley into the Hudson and Mohawk drainage, for recent discoveries, now to be summarized, indicate in these areas the existence of focal variants, upon which the writer has predicated the Laurentian Aspect. Here occur sites linked to the Brewerton Focus by a differential number of the positive and negative elements enumerated for the latter. The gouge, bannerstone, and broad-bladed point persistently appear; the plummet is nearly as universal; and the ulo and ground slate point are frequently encountered.[2] Copper objects, however, have not been reported in situ, although they have a rare surface distribution throughout the area.

It must be remembered that insufficient work has been done to define clearly the degree of relationship among the tentatively postulated foci, but the following summary presents the evidence to date.

Blue Hill Focus (?)

For two seasons (1936-37) Messrs. Douglas S. Byers and Frederick Johnson of Phillips Academy, Andover, explored at Blue Hill, Hancock County, on the southcentral coast of Maine,

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[1]Two burials of a small breed of this animal were unearthed on the Oberlander site (Ritchie, 1940, p. 52).

[2]While the ulo and slate point were not found in situ at Brewerton, a specimen of the latter, of striped Huronian slate, triangular in section, 7 1/4 inches in length, with tapering tang, typologically identical with examples from the Blue Hill, Maine shellheap, next referred to, is alleged to have been plowed out on the Robinson site (now in the collection of Mr. Charles Denman, Brewerton, New York) and a large chipped, but evidently unfinished, sandstone ulo (Plate 119) was taken from the shallow water at the river edge of the Oberlander site, beyond cavil washed from the refuse, in the spring of 1940, by Mr. Oscar Oberlander of Syracuse, New York.

Plate 117. Pottery, Copper, Bone and Antler Artifacts
Oberlander Site, No. 1
Brewerton Focus, Laurentian Aspect

1-5, 7, 14, 15, 20, 22, dentate-stamp-ornamented sherds (20, has herringbone, 22, rocker-stamp design); 6, comb-trailed sherd; 21, punctate-marked sherd; 28, cord-malleated surface treatment; 29, channeled interior surface; 30, interior of pointed pot bottom; 8-10, fragmentary multiple unilaterally barbed harpoons; 11, 17, 25, dog coprolites; 12, 19, 27, copper awls; 13, copper flake; 16, deer scapula scraper; 18, copper gorges; 23, bone projectile or spearpoint; 24, basal portion of harpoon, of single barb and line hole type; 26, fragment of copper chisel (?); 31, 43, needles of thin, flat, perforated type; 32, bear canine with grooved and tapered root; 33, section of bone tube; 34, tubular bone bead; 35, 36, split beaver incisor cutting or scraping tools, long edge or edges sharpened; 37, 38, whole beaver incisors, lower lateral surface gouge-shaped; 39, whole beaver incisor, lower lingual surface chisel-shaped; 40, awl, from raccoon splanchnic bone; 41, 42, fragments of thin curved needles; 44, 45, awls, with perforated base; 46-49, double-pointed implements; 50, 51, awls, from rough splinter of bird and mammal bone, respectively; 52, 53, 54, conical antler arrowpoints (53, a process piece, shows drilled interior); 55, ornamented antler object, possibly a flaking tool; 56, bone knife, from mammal long bone section; 57-60, ground or polished splinter awls; 61, 73, bird bone awls; 62, 63, elk and deer antler punch, respectively; 64, flaker of deer antler tine; 65, cylindrical antler flaker; 66, portion of split antler pendant-like artifact; 67, 68, bone flakers, edges chipped; 69, bear ulna awl; 70, raccoon fibula awl; 71, deer ulna knife; 72, bear splanchnic awl.

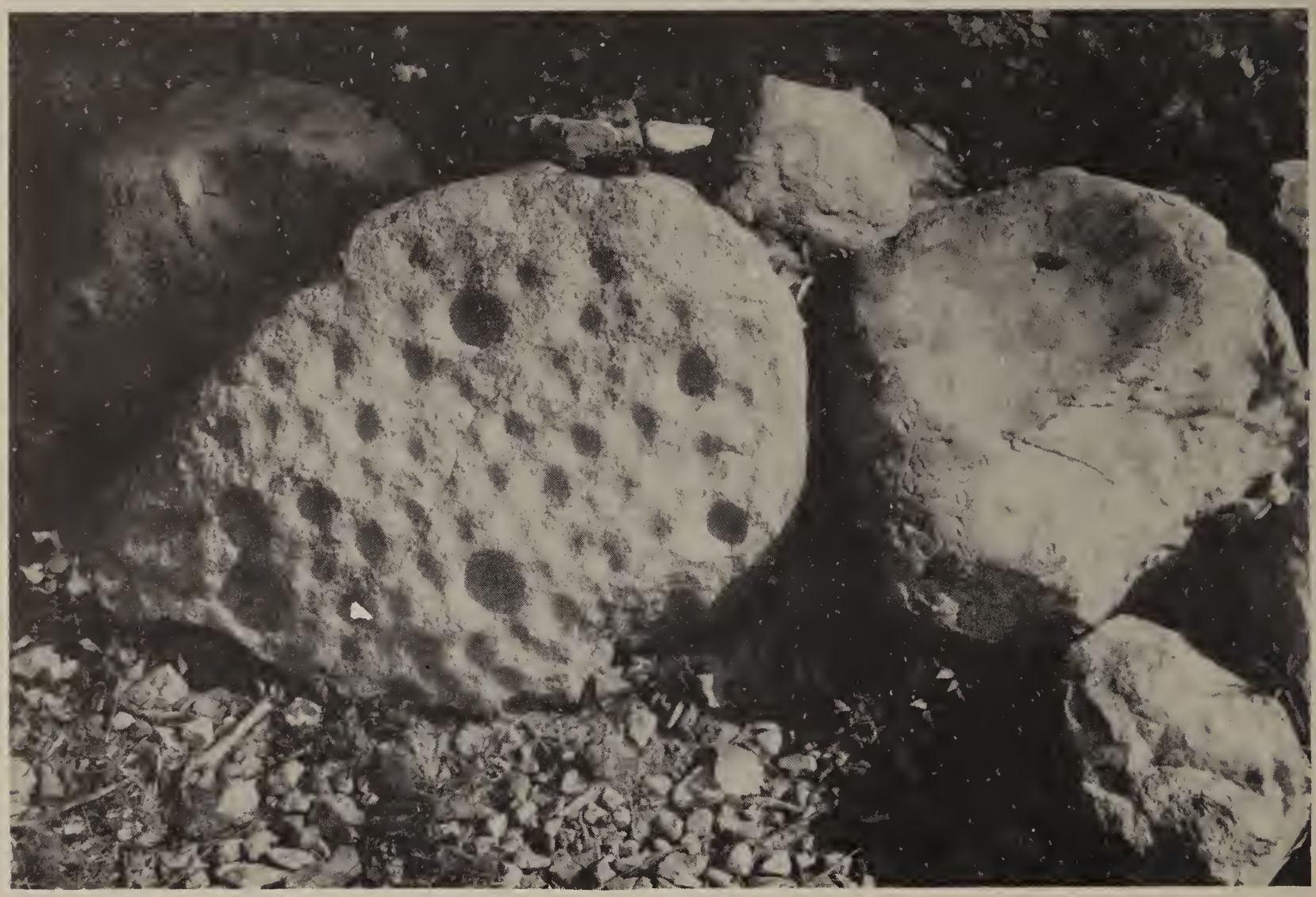

Plate 118. Multiple-Pitted Boulder and Mortar
Oberlander Site, No. 1
Brewerton Focus, Laurentian Aspect

Note pocket knife atop former for scale.

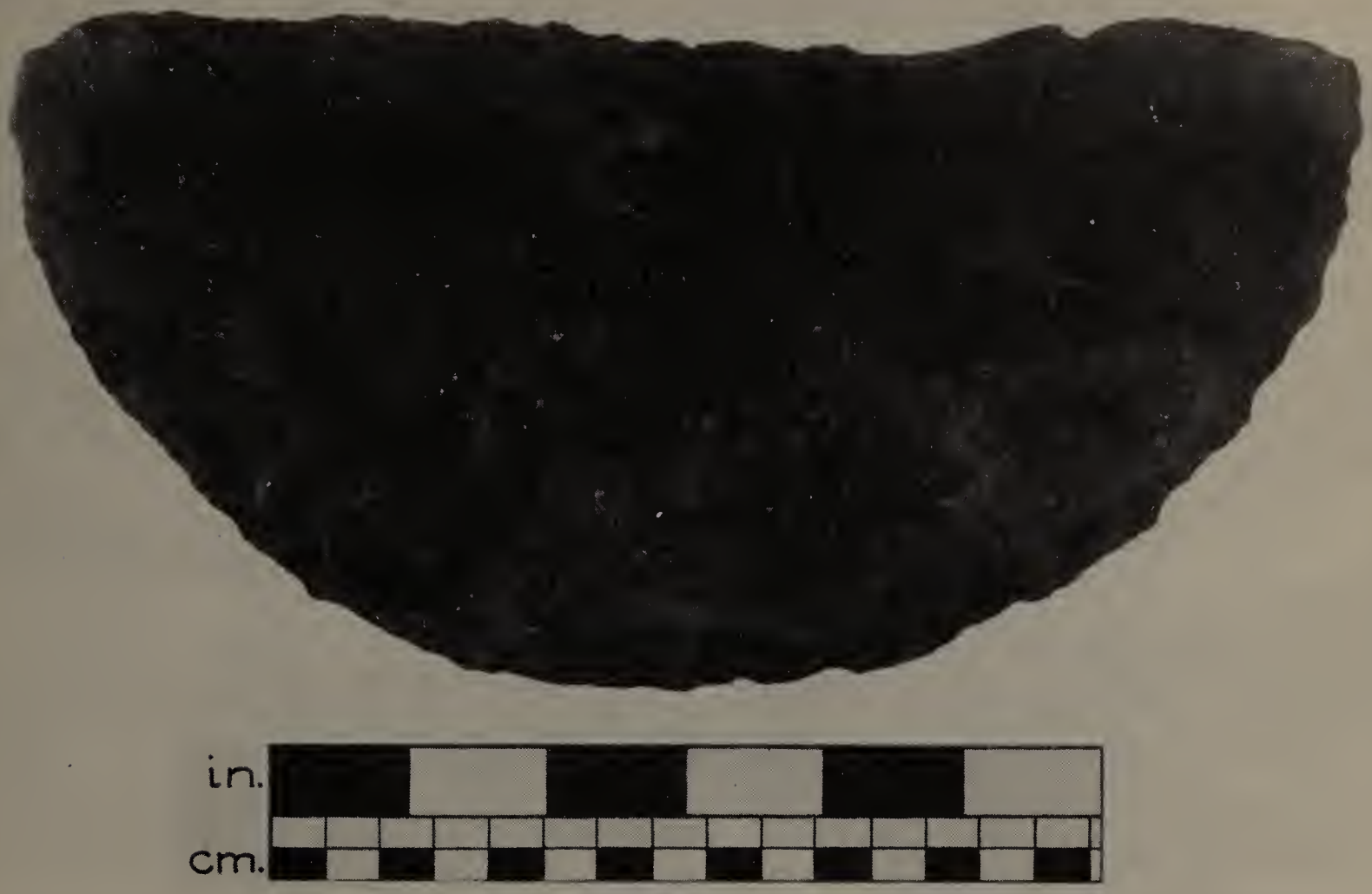

Plate 119.

Chipped Sandstone Ulo
Oberlander Site, No. 1
Brewerton Focus, Laurentian Aspect

Collection of Oscar W. Oberlander, Syracuse, New York.

a large shell midden of a single culture facies which produced flexed, extended, and bundle burials, and a host of artifact types. The excavators have kindly provided the writer with essential data for comparative studies and shown him the material found. However, pending publication of their report, detailed references will be omitted and only a few general observations and comparisons made.

The prime significance of the Blue Hill component resides in its bearing on the so-called "Red Paint" culture of Maine. Since 1892, when Willoughby[1] first called attention to the great boneless cemeteries at Bucksport and Orland, the complexities of the problem have increased with the progress of excavations. The most extensive work in this field was performed by Moorehead[2] for Phillips Academy on 12 sites in Maine, on which he opened a total of 440 graves.[3] No village sites were uncovered; hence the Red Paint culture was but a mortuary complex.

The typical Red Paint grave consisted of a mass of powdered hematite or red iron oxide, derived from central Maine, varying in volume from a quart or two to more than a bushel, scattered over the bottom of a round or oval pit dug to a depth of 2 to 4 feet in sand or gravel, and containing in and about the ochre a varying number of stone objects of such types as gouges, adzes, celts, plummets, ground slate points, chipped points and knives, fire-making sets consisting of a lump of decomposed iron pyrites and a stone strike-a-light, and an occasional slate pendant, bannerstone, or other "problematical" article. In only 3 or 4 instances did bone fragments persist, in all but one of these in a calcined condition. It was accordingly hypothesized that either the bodies had been cremated or, as Willoughby and Moorehead thought more probable, had disappeared through decay due to relatively great age. In support of this contention they pointed out that 20% of the stone tools exhibit from a trace to an advanced degree of disintegration. The opposition has shown, however, that felsite, the material of the majority of the pecked and polished implements, is an unstable rock which would rapidly decompose when acted upon by the iron sulphide (iron pyrites fire-making outfits) placed in the grave.

An inventory of the salient elements of the Red Paint culture comprises, according to Moorehead,[4] the following: gouges, predominantly of long and slender type; celt and adze blades of long triangular or rectangular shape, the latter with flat, ridged, or knobbed backs; plummets of oval, elongated oval, and effigy types; long, oval, perforated pendants; small perforated slate crescents; bipennate bannerstones with short wings; ground slate points, with large hexagonal or small flat blades; chipped knife blades, arrow, and spearpoints, stemmed, notched, and occasionally barbed, and more rarely, in the case of the knife blades, with stemless straight base.

When these are arrayed beside the objects from Blue Hill a sufficient incidence of typological agreement is evident to induce Byers and Johnson to believe that Blue Hill repre-

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[1]Willoughby, 1898, 1915, 1935.

[2]Moorehead, 1922.

[3]At least 8 other cemeteries of this culture are known to have been destroyed, bringing the total number of all graves to about 1440. Some 7200 artifacts are preserved in various public and private collections (Moorehead, 1922, pp. 127-133).

[4]Moorehead, 1922, p. 103.

Plate 120. Extended Adult Male Burial (No. 3)
Oberlander Site, No. 1
Brewerton Focus, Laurentian Aspect

Lay on subsoil. Bones sprinkled with red paint.

Plate 121. Multiple Burial (Numbers 4-6, 8)
Oberlander Site, No. 1
Brewerton Focus, Laurentian Aspect

In pit dug in subsoil. 4, adult female in extended prone position; 8, adult male, similarly interred; 6, infant, in extended supine position; 5, skull of adult female. Lower legs of 4 and 8 absent. Disturbance may be due to woodchuck activity.

sents a habitation site, the first ever recognized, of the Red Paint culture.[1] At Blue Hill, however, in addition to a substantial duplication of the inland congeries, there was present a considerable amount of what may, from the evidence, be construed as more utilitarian goods; and doubtless due rather to the preservative nature of the shell heap environment than to the original lack from the graves, bone and antler devices abounded. Considering this more complete complement, the Red Paint complex reveals fundamental affinities with the assemblage at Brewerton and on the stations now to be considered.

Vergennes Focus

Simultaneously with the events at Blue Hill and Brewerton, a discovery of great moment was being made in the Lake Champlain Valley by the Champlain Valley Archaeological Society. The location of the find was a sandy spur extending into the marsh bordering the west bank of Dead Creek, near its junction with Otter Creek, some 4 miles east of Lake Champlain and an equal distance west of the village of Vergennes, Vermont (Plate 109, site 6). Here had stood an ancient village of unknown extent, for circumstances permitted the excavation of only about 6,000 square feet.[2] This was found to be covered with a thin refuse mantle, 8 to 14 inches in depth, filled with chert and quartzite chips, implements of various sorts, and occasional fire-broken stones. Beneath this the clay subsoil was ascertained to be plentifully pock-marked with shallow and often irregular depressions, some plainly dug pits, others perhaps tree-fall hollows or small erosional gullies filled with humus and camp refuse. Except for two, which held considerable numbers of potsherds, the pits were very unproductive. The

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[1]Subsequent excavations in two other shell heaps on Frenchman's Bay (Hadlock, 1939; Rowe, 1940) have revealed diagnostic elements of this "Red Paint" complex (gouges, plummets, ground slate points) in a nonceramic basic level overlaid by pottery-bearing layers lacking these traits. Evidence thus appears to be accumulating for the separation of the Maine shell middens into two periods of deposition, the earlier pertaining to the Red Paint culture (Laurentian Aspect ?), the later possibly to the Coastal Aspect. Thus Moorehead's earlier convictions, that the shell heaps represent a different and later culture (Moorehead, 1922, pp. 149-150), may be partially sustained, while on the other hand, the current and opposite views expressed by Byers and Johnson (by correspondence) and others also finds partial support in the new evidence. In the writer's opinion, a combination of the two hypotheses seems more convincing at this time, viz., that while certain shell middens (as the Nevin component at Blue Hill) pertain in whole to the "Red Paint" complex, and the basal layers of others (Taft's Point and the Waterside shell heaps) are referable to this culture also, the superior deposits of these latter Frenchman's Bay stations as well as a number of shell heaps in toto (e.g. the Tranquility Farm and Jones Cove sites, Hadlock, 1939, p. 24) are the product of a subsequent cultural entity. This concept does not deny a certain as yet undetermined degree of continuity between the two manifestations.

[2]Bailey, 1939. Also from the writer's study of the site and collection by kind invitation of Mr. John H. Bailey.

Plate 122. Artifacts from Pits on the Smoky Hollow Site
Brewerton Focus, Laurentian Aspect

1, 2, copper awls; 3, rude knife or cache blade; 4, triangular point; 5, 6, 10, fragmentary drills; 7, 11, 14, corner-notched points; 8, 9, 12, 13, side-notched points; 15, crescentic scraper; 16, bannerstone (from adjacent surface); 17-19, gouges.

Collection of George W. Walker, Rochester, New York.

bulk of the specimens came from the unplowed refuse layer, at depths ranging from 2 to 12 inches, and were randomly distributed both horizontally and vertically throughout the zone of occupation. Only stone artifacts remained and these are divisible into several groups, of which the most important are the ground slate objects comprising fragments of 9 semilunar knives or ulos, one bearing the trace of a ridged back; a broad red slate point with broken tip and stem; and a small medial section, hexagonal in shape, of what appears to have been a "bayonet" point like those of the Red Paint culture.

In the chipped stone category is a wide variety of stemmed, side- and corner-notched points of all sizes, and a relatively large number of broad triangular points, often with concave base, made from local gray quartzite and chert and in 6 instances from exotic argillite. Scrapers, of quartzite and chert, mostly of small oval form, are also abundant and a number of chert drills, with either notched or T-shaped bases, are in the collection.

Polished stone articles comprise gouges of short broad form and one section of a long slender type, a small trianguloid celt, a thin celt-like scraper, and a single reworked wing fragment of a pennate type of bannerstone.

Sinewstones of two styles; oval hammerstones roughly chipped from blocks of quartzite; and battered pebble hammerstones of the same material, in all sizes from a walnut to an orange, constitute the simple inventory of rough stone tools.

Numerous potsherds came from all depths over most of the excavated space, and are amenable to analysis into 2 styles of ware: a thin, hard, fine-grained, usually red fabric and a thick, poorly tempered, black to brown ware. Both kinds were intermingled wherever pottery occurred, with the thin hard ware predominating. Many of the sherds show evidence of manufacture by the coiling technique, and 2 sections of clay coils were found. The common form of decoration on both styles appears to have been made by impressing a cord-wound twig upon the still plastic clay. Another prominent design, often combined with the above, consists of a row of circular punctates, spaced about an inch apart, almost perforating the jar just below the lip and bulging the clay on the interior surface. Several sherds exhibit a zig-zag motif closely resembling the scallop shell pattern seen in New England coastal pottery. All are grit-tempered, largely with crushed quartz and granite aplastic, and range in texture from medium coarse to medium fine. Both smooth and cord-marked-exterior body surfaces occur. The rims are straight or slightly outcurving and a few examples possess incipient collars, usually appliqued. The lips are flat or round and for the most part outsloping.

Beside the pottery, steatite vessels were in use on the site, as proved by three relatively thin sections, one a notched rim piece.

The Vergennes site is significant because here for the first reported time the ground slate ulo and point were found, not only together underground in such a manner as to afford strong presumptive evidence for their coexistence, but in direct and definite association with a complex of artifact traits, some previously only suspected of being complemental, and in such stylistic harmony with Blue Hill and Brewerton as to remove any doubt of their fundamental relationship. The presence at Vergennes, however, of ground slates in situ, which have not so far actually been found underground at Brewerton, and the absence at the former site of native copper artifacts, the plummet, chopper, and certain forms of the bannerstone, all characteristic

Plate 123.

Representative Stone Artifacts
Manning and Round Lake Sites
Vosburg Focus, Laurentian Aspect
Length of fig. 35 is 6 inches

1-12, Round Lake site; 13-36, Manning site.

1, 3, 5, 14, 26, stemmed points; 2, 4, 7, 8, 20, 24, 27, side-notched points; 6, pebble hammerstone; 9, 12, ulo fragments; 10, adze; 11, 32, gouges; 13, 19, 21, 22, 23, corner-notched points; 15, rectangular chipped stone object; 16, stemmed end scraper; 17, 18, 25, 29, triangular points; 28, 33, abradingstones; 30, drill; 31, chopper; 34, 36, bannerstone fragments; 35, bannerstone in process.

Collection of William O. Naylon, Ballston Spa, New York.

of the Oneida River stations, considered together with various discrepancies in the Maine series, notably the lack of the ulo, copper, and chopper, compels the differentiation, for the present, of three foci, as already stated. The evidence for the fourth suggested focus will now be adduced.

Vosburg Focus

This last of the tentatively designated foci of the Laurentian Aspect, is predicated upon a series of surface sites in the Hudson-Mohawk region.[1] It is the least substantiated, inasmuch as refuse deposits are known to exist on only one component, and none can positively be shown to be "pure" or "closed". Nevertheless, the recurring complex, with but minor variations, recorded over a wide area, suggests a discrete focal manifestation.

The principal components of the Vosburg Focus are as follows: the Fitch site, on a high sandy terrace above the east bank of Fish Creek, near its point of outlet into Saratoga Lake, Saratoga County (Plate 109, site 14); the Manning site, on a similar high terrace on the west shore of Saratoga Lake, Saratoga County (Plate 109, site 13); the Round Lake site, on a low gravelly terrace, near the west bank of Malta Creek, close to its mouth on the north shore of Round Lake, Saratoga County (Plate 109, site 12); the Vosburg site, on a high sand terrace bordering the Normans Kill on the east side, about 2 miles west of Guilderland, Albany County (Plate 109, site 9); the Covered Bridge site at French's Hollow, on the corresponding high terrace above the Normans Kill on the south side, one mile west of the Vosburg site, Albany County (Plate 109, site 10); the Dunsbach Ferry site, on a sandy ridge about 30 feet above the south shore of the Mohawk River, approximately one mile northeast of the town of Dunsbach Ferry, Albany County (Plate 109, site 11); the Wurz site, on the Mohawk River flats, one mile southeast of Hoffmans, on the north side of the river, Schenectady County (Plate 109, site 8); and the Clapper site, situated on several low sand knolls lying in the basin of a postglacial lake, now partly occupied by a vlei drained by the Crabb Kill, about one mile southwest of Glenville, Schenectady County (Plate 109, site 7).

These sites produce no native copper articles or ground slate points and but very few celts. Probably because the relic-bearing zone has been frequently plow-turned, subjecting its contents to frost and atmospheric action, no bone implements occur on most, and pottery is rarely encountered.[2] The positive traits include infrequent steatite pot fragments; gouges, principally

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[1]The writer is principally indebted to Messrs. V. J. Schaefer, William Naylon, and John Swart, all members of Van Epps-Hartley Chapter, New York State Archeological Association, for the privilege of studying and photographing the material illustrated, and for their kindness in conducting him on a tour of the sites in question.

[2]The Fitch and Wurz sites are exceptions. The former has produced a little subsurface pottery; from a shallow refuse deposit below plow level on the latter has recently been recovered pottery generally similar to that from Brewerton and Vergennes in association with the same characteristic stone types and a few bone and antler implements. This subsurface stone material corresponds with that found in the plow level.

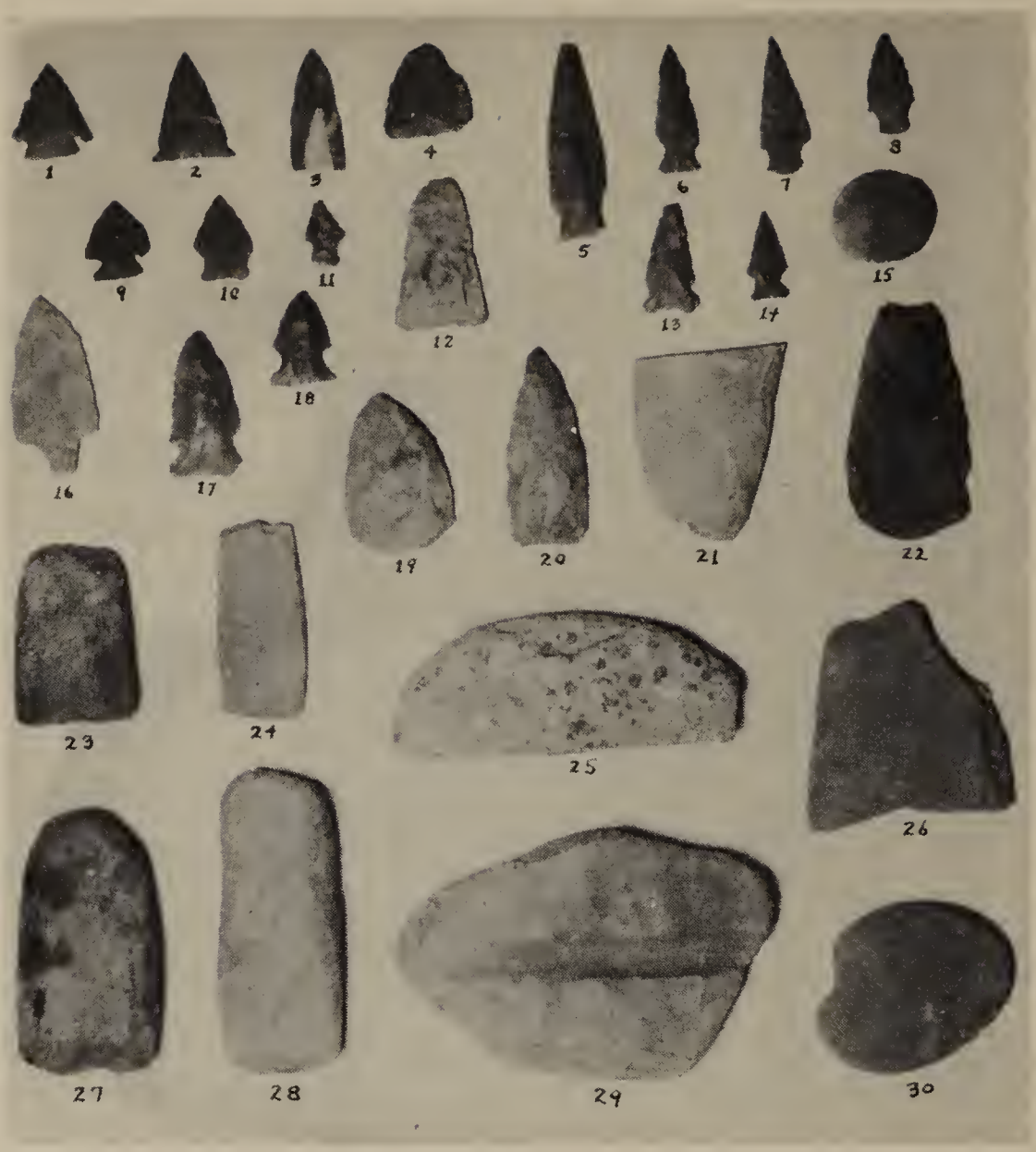

Plate 124.

Representative Stone Artifacts
Vosburg Site
Vosburg Focus, Laurentian Aspect
Length of fig. 29 is 5 3/4 inches

1, 9, corner-notched points; 2, eared side-notched point; 3, triangular point; 4, cache blade; 5, 7, 8, 16, stemmed points; 6, 10, 11, 13, 14, 17, 18, side-notched points; 12, 20, triangular knives or points; 15, round scraper; 19, ovate knife; 21, thin adze or scraper blade; 22, chopper; 23, 27, gouges; 24, celt; 25, bannerstone in process; 26, abradingstone; 28, adze; 29, shaft rubber; 30, sinewstone.

Collection of Vincent J. Schaefer, Schenectady, New York.

of short broad form; plano-convex adzes; celt-like scrapers; pitted stones, having single, double, or multiple pits on one or more surfaces; grooved arrowshaft rubbers; sinewstones with one main groove; plummets; pebble hammerstones; anvilstones; choppers; bannerstones of several forms (oval, rectangular, trapezoidal, and bipennate);[1] triangular and oval scrapers, a few of the latter notched; drills; projectile points and knife blades of many forms (stemmed, side-and corner-notched, semilozenge-shaped, triangular with straight or concave base); a small number of aberrant flint objects; and the ulo of ground slate, principally with ridged back. Many of these forms are portrayed on Plates 123, 124. The materials utilized in the chipped stone industry are various and include regional cherts, and partly exotic quartzite, jasper, slate, argillite and rhyolite.

The main differences between these eastern New York sites, considered as a whole, and those at Brewerton are the occurrence on the former of the ulo,[2] arrowshaft rubber, and sinewstone, and the absence therefrom of native copper implements. They differ from the Vergennes component in having the plummet, chopper, certain forms of the bannerstone, and arrowshaft rubber, and in lacking the ground slate point, and for the most part pottery.

In conclusion it may be emphasized that sufficient data have been accumulated, principally with respect to the distribution of the stone gouge and the ground slate point and ulo, to indicate the northeastern provenience of the Laurentian Aspect, for which they are diagnostic markers. These characteristic elements are recorded in some numbers from lower Ontario, north of Lake Ontario, but become progressively rarer westward in the Ontario Peninsula;[3] they occur associated with other stone work on the important Tadoussac site at the mouth of the Saguenay River[4] and on several sites in Lower Labrador.[5] In Maine the Red Paint culture probably constitutes an advanced localized special development which may have to be recognized and named as a focus ("Blue Hill"?). The Vergennes Focus will doubtless be found to have a wide range not only in Vermont but in the adjacent New England states and in northeastern New York as well. Farther south a slight variant, the Vosburg Focus, appears to take its place. Concrete evidences of the still more southerly spread of this focus are to be found sparingly in the lower Hudson and coastal regions of New York, including western Long Island, and even in northern New Jersey. In central and western New York the Laurentian complex was energized by the infusion of a western element--native copper--probably obtained by trade contacts radiating from the Lake Superior copper mining region. This and other already designated variations, together with isolation, seem responsible for the development of a slightly different facies, the Brewerton Focus, originally non-ceramic, but later the recipient of pottery, possibly introduced by early Point Peninsula contacts, since both ceramic styles found on the Brewerton Laurentian stations also characterize the Vinette and certain St. Lawrence Valley sites.

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[1] One from the Fitch site is pick-shaped and may be intrusive.

[2] Only one example at Brewerton, from the Oberlander site (Plate 119).

[3] Wintemberg, 1931, pp. 72-73, 70-71.

[4] Wintemberg, 1929, p. 40; Speck, 1916 (The gouge, "bayonet" slate point, and chipped stone ulo were found here.)

[5] Strong, 1930, pp. 126-144 (The gouge, fragmentary ground slate point, chipped stone ulo, and ground slate ulo of a somewhat different type were recovered on these sites.)

Plate 125.

Burial Cluster
Frontenac Island Site
Frontenac Focus

Burial 9, extended skeleton of young infant, partly overlying burial 10, a loosely flexed adult female. Burial 11, adult male tightly flexed on back, two limestone slabs on edge behind skull. Burial 12, extended infant skeleton, limestone slab over chest and skull. Burial 13, extended adult male; legs, left arm, mandible absent; large limestone slab over skull. Immature dog of large breed buried over slab. Burial 14, loosely flexed, young adult female; skull, except mandible, missing.

Group of grave goods, indicated by arrows, over left humerus of burial 11. Consisted in part of 4 deer scapula awls (Plate 150, fig. 9), turkey radius awl, narrow stemmed points and broad and narrow side-notched points.

Burial 12 had 2 narrow stemmed points near the left femur, 2 awls, and a sprinkling of red paint over the skull.

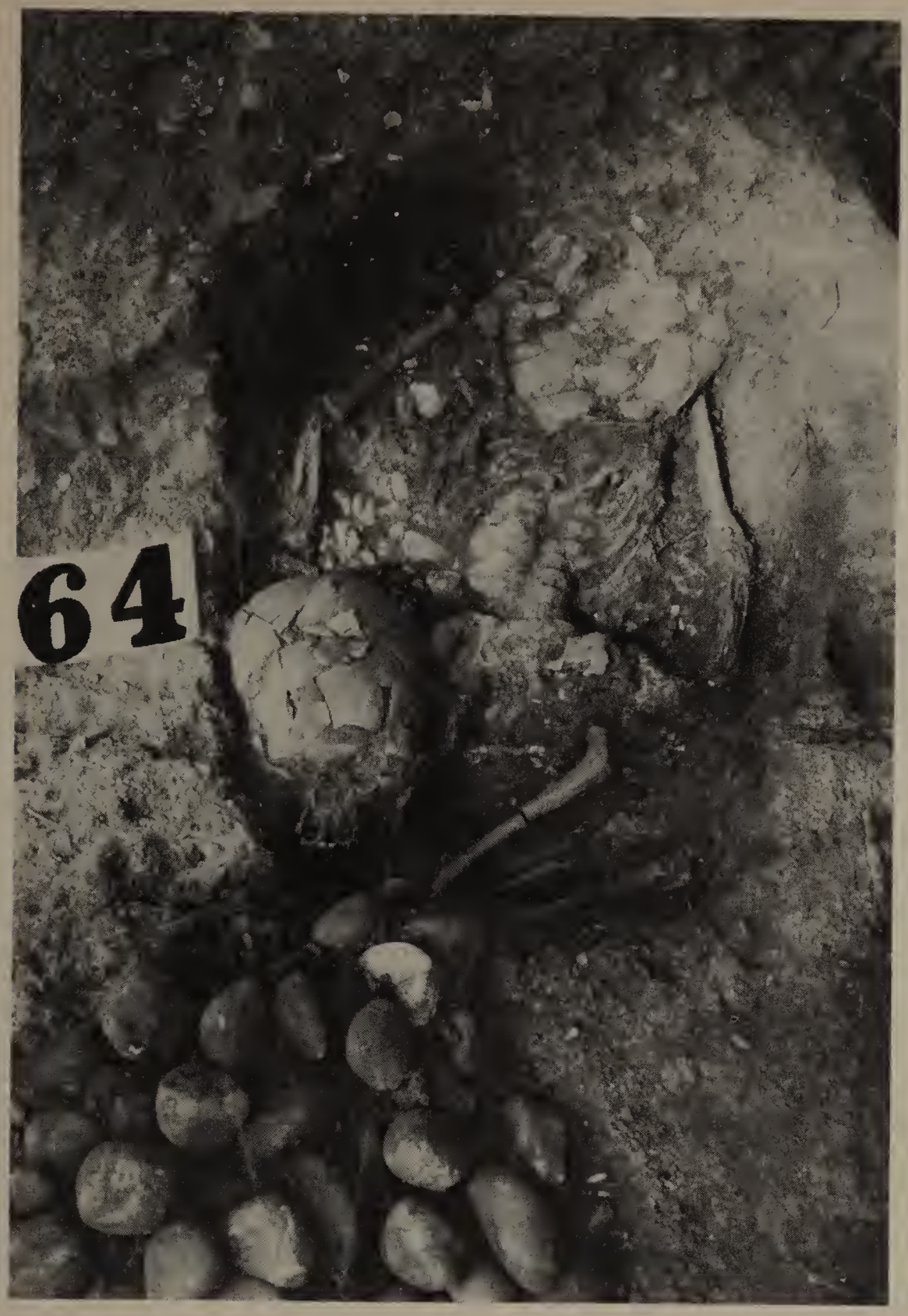

Plate 126.

Burial of Child and Adult Skull
Frontenac Island Site
Frontenac Focus

Loosely flexed skeleton of young child in grave fossa dug in subsoil. Decapitated skull of adult female (with several articulated cervical vertebrae) on right lower side. The significance of this occurrence is unknown.

Note probably unrelated heap of pot stones (?) in foreground.

Plate 127. Loosely Flexed Skeleton of Adult Female
Frontenac Island Site
Frontenac Focus

Note arrowpoint at feet, whetstone and double-pointed bone implement below lower arms.

Plate 128. Multiple Burial of Flexed Adult Individuals
Frontenac Island Site
Frontenac Focus

Evidently contemporaneously interred in trench-like grave. Crushed box turtle shell rattle on chest of 56; cluster of grave goods, associated with 56, 57, or both, partially exposed above skull of 56.

The archaeological recognition of the Laurentian Aspect as an old, fundamental, and widespread manifestation in the northeast climaxed its theoretical cognizance by several students. Strong seems to have been the first to discern an essential unity within various old, northeastern cultures,[1] designating as a core a recurring complex comprising polished stone gouges, chisels, ungrooved celts, stone gorgets (not a Laurentian trait), plummets, large chipped points and ground slate points or ground semilunar knives. He stated that the simple bone harpoon was sometimes present and pottery but rarely occurred.[2] He concludes "that we have in northeastern North America a rather widespread early archaeological horizon which contains nearly all the basic elements essential to the development of both Indian and Eskimo cultures as they appeared in historic times."[3]

Speck, in his somewhat earlier historical reconstruction, based mainly on northeastern ethnology,[4] had also hypothesized an ancient time level, a paleo-Algonkian substratum ancestral to the present Wabenaki groups, which was modified by cultural influences from the south and west, perhaps accompanied by ecological changes during which the moose and caribou were replaced, south of the St. Lawrence, by the Virginia deer.

A substantial reality seems now to have been given this old horizon in the form of the Laurentian manifestation, with its basic core of boreal traits. According to a recent discussion of the boreal forest zone by Spaulding,[5] there is a widely disseminated assemblage in the northern coniferous forest belt of the Old and New Worlds, consisting of "gouges and adzes, triangular and large notched and stemmed chipped points and other chipped stone types; and a number of widespread bone artifacts, such as barbed points, worked beaver teeth, and a variety of other types."[6] He traces a number of secondary modifying influences on this original complex, which he identifies with basic Laurentian. From the Dorset Eskimo came the ground slate point, possibly the semilunar knife, probably the steatite pot, - iron pyrites fire-making sets (this, however, is a very old and widespread trait), and some bone types.[7] In common with the writer, Spaulding sees the effect of Lamoka contact on the southern Laurentian in the "beveled adze, chopper, possibly the stone pestle, and some bone and chipped stone types."[8] The southeastern archaic cultures seem to him the source of the Laurentian "bannerstone, and possibly pottery and some chipped stone types,"[9] while "the native copper of the Laurentian undoubtedly came from the Lake Michigan area and was probably developed internally."[10] It is however, somewhat difficult to understand why, if the bannerstone and dentate-stamped pottery came from the Shell Mound culture (where the latter occurs only near the top of certain components) via the Coastal Aspect, as he surmises, that very important element of both the donor and transmitter,

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[1]Strong, 1930.

[2]Ibid., p. 140 (This is substantially the congeries previously assigned by Parker to his Eskimo-like culture in New York, see p. 6).

[3]Ibid., p. 143.

[4]Speck, 1926.

[5]Spaulding, Ms. (Used with permission)

[6]Ibid., p. 128.

[7]Ibid., p. 128.

[8]Ibid., p. 128.

[9]Ibid., p. 128.

[10]Ibid., p. 129.

Plate 129.

Disturbed and Superimposed Burials
Frontenac Island Site
Frontenac Focus

Burial 35, loosely flexed adult male. Burial 36, tightly flexed adult female, upper portion destroyed probably by intrusive pit. Burial 37, tightly flexed adult female, partly underlying 38, and accompanied by antler shaft straightener, indicated by arrow 1 (shown in Plate 150, fig. 30). Burial 38, partially articulated skeleton of adult male, probably a bundle interment, evidently subsequent to burial 37. Pair of unworked wolf mandibles over pelvis (arrow 2). Burial 39, fragmentary skeleton of child intrudedupon by fire pit.

Note hearth depressions in background.

Plate 130. Extended Burial with Grave Goods
Frontenac Island Site
Frontenac Focus

Skeleton of young adult male. Arrow 1 points to left humerus of burial 79, probably coevally inhumed; arrow 2 indicates plummet with burial 79; arrow 3 shows location over left arm of numerous articles of grave goods, including ground slate point (Plate 148, fig. 19) resting upon chopper, whetstone, antler flaker (Plate 150, fig. 20), bone whistle (Plate 151, fig. 33), several drills (Plate 147, figs. 74, 78), iron pyrites, and antler comb (teeth broken off and lying under comb top) (Plate 152, fig. 31).

Plate 131.

Extended Burial with Grave Goods
Frontenac Island Site
Frontenac Focus

Adult male skeleton, skull displaced over right shoulder. Skull of adult female overlying lumbar vertebrae. Right femur and half of pelvis destroyed by large intrusive hearth. Dog burial under left shoulder. Two plummets (Plate 148, fig. 16) near left wrist, adze near right tibia, other objects not shown.

Burial 78 (see Plate 130) lay parallel and almost in contact on the left and was evidently simultaneously interred.

the grooved axe, failed to appear in the Laurentian congeries. His suggestion that the upper Great Lakes area be examined as an alternative source of both the bannerstone and Woodland ceramics impresses the writer with greater force.

A definite answer cannot yet be given the important question of whether the probable Dorset Eskimo elements in the Laurentian[1] stem from contacts after the latter had reached eastern Canada or whether they may be regarded as linked traits derived from a common background when both Indian and Eskimo groups may have been resident in the area west and southwest of Hudson Bay. The renewed tendency to regard the eastern Eskimo movements as expansive from the central Canadian forests to the Arctic fringes, perhaps under the impact of incoming Athapascans, in the early centuries of the Christian era,[2] adds credence to the latter possibility, as does the similarity in physical type noted by Shapiro, between the northeastern Algonquians, the Chipewyan Indians of Lake Athabasca, and large groups of Arctic Eskimo,[3] unless this similarity is the result of much later connections, as seems indicated by Shapiro's conclusions.[4]

Neither the ethnological nor the recent archaeological evidence discloses what seems to be an old population having a marked brachycephalic factor, correlated with the Laurentian level, at least in New York state, and apparently intrusive into the dolichocephalic Lamoka population. The presence of this unsuspected and still inexplicable constituent was suggested by the few crania, all of adult females, from the Brewerton Focus amenable to measurement,[5] and was confirmed by the much larger series from Frontenac Island, referred to on pages 283, 287.

Frontenac Focus, ? Aspect, ? Phase, Archaic Pattern

From the chronological viewpoint it seems pertinent to introduce at this juncture a recently discovered complex termed the Frontenac Focus, evidently the temporal link between the Brewerton and Lamoka foci. Mention has been made of Lamoka traits at Brewerton, especially on the Oberlander site; and such Laurentian types as broad-bladed points, present in small numbers on all Archaic components, and a bone harpoon with single barb and line hole from the Lamoka

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[1]These are enumerated by de Laguna in a recent paper (de Laguna, Ms., used with permission, as follows: both fixed and detachable barbed bone points; the leaf-shaped ground slate blade with tang, having a lenticular and sometimes facetted cross-section and long slender or short broad blade (the barbed forms and the several variants of the long slender type, including the facetted "bayonet point," are Indian modifications of Dorset forms); leaf-shaped point with multiple side-notched base; triangular point, usually long and narrow, with concave base and convex edges, frequently delicately serrated; curved edge knife; asymmetric scraper; and concave edge side-notched scraper. The ulo has not yet definitely been identified from an unmixed Dorset site. The gouge, plummet and bannerstone are probably of Indian origin.

[2]Jenness, 1940, pp. 3-4.

[3]Ibid., p. 4.

[4]Shapiro, 1934, pp. 2731-2732.

[5]These gave cephalic indices of 81.6, 77.3 and 78.2, respectively (Ritchie, 1940, pp. 60, 93).

Plate 132. Extended Burial with Mortuary Offerings
Frontenac Island Site
Frontenac Focus

Adult female skeleton. Articles under right lower arm consist of antler spoon (Plate 151, fig. 27), plummet (Plate 148, fig. 15), conch shell receptacle (Plate 152, fig. 43), and fragment of worked conch shell (fig. 42, same plate).

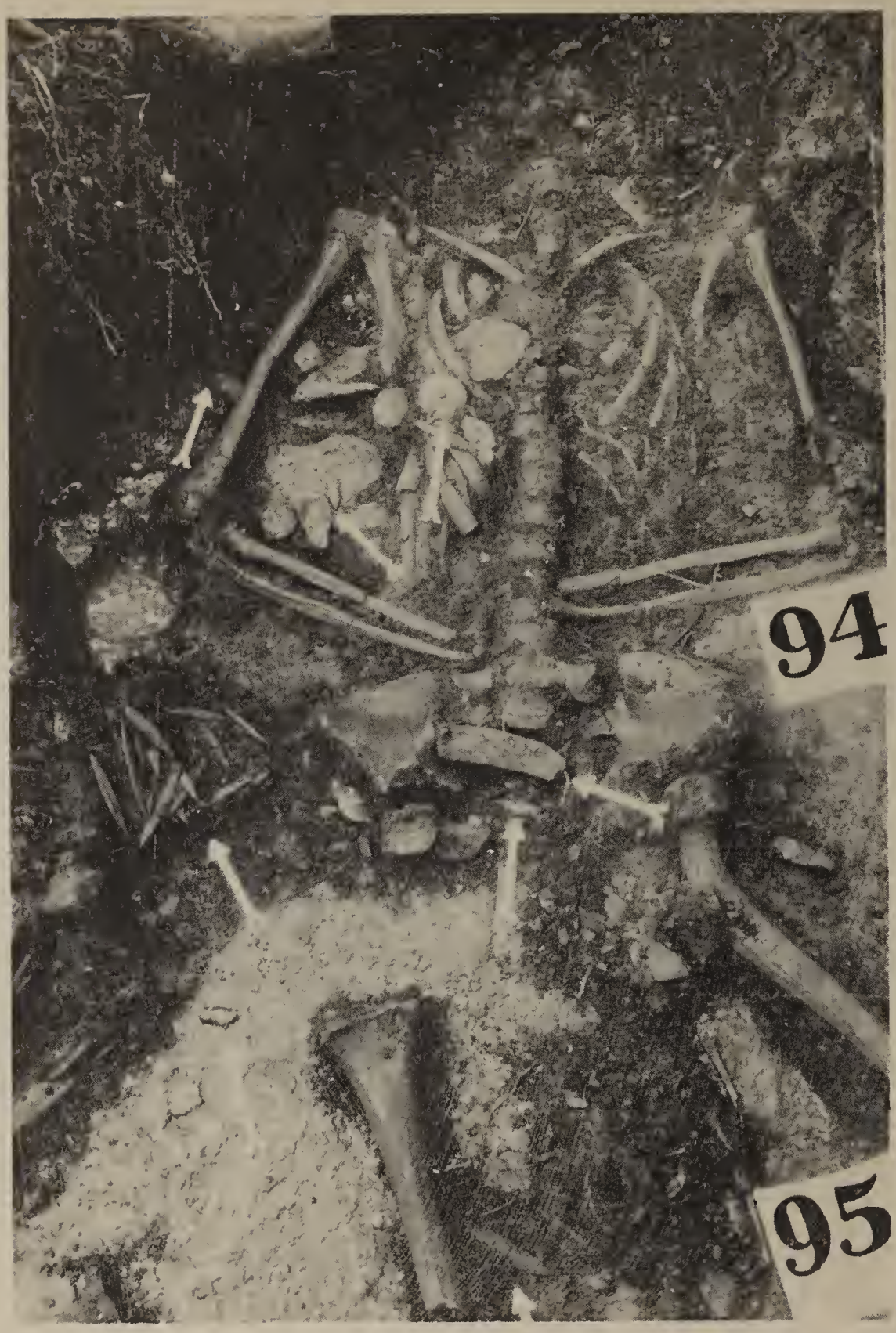

Plate 133. Loosely Flexed Skeleton with Mortuary Furnishings
Frontenac Island Site
Frontenac Focus

Headless burial of young adult female, 94, accompanied by heap of 37 bone gorges near right hip (Plate 151, fig. 3), 4 circular conch shell pendants (Plate 152, fig. 41), and other objects over right chest; arrowpoints, etc.

Skull of adjacent flexed burial, 96, partly shown in Plate 141, destroyed by this burial. Note bones of young infant, 95, below 94.

Plate 134. Burial Cluster
Frontenac Island Site
Frontenac Focus

Southern portion of one of several similar closely arranged groups found on the site (see Plate 135). The partially disturbed flexed burial, 104, has destroyed the skull of extended burial 105, whose lower legs rest over and parallel with the tibiae of burial 111, to which the grave goods indicated by the three lowermost arrows pertain.

Burial 106 is a loosely flexed adult female whose skull seems to have been destroyed by the loosely flexed child burial 107. Burial 108, not shown in the photograph, was the skeleton of a young infant, extended over the skull of burial 107.

109 is a large multiple cremation reaching from the position of the number "9" card in the background to number 109 in the foreground. It underlay burials 107, 108, and 110 and had associated with it two canines of the wolf and one of the elk, all perforated (see arrows above 109).

Pressure of left leg of partially exposed flexed adult female, 110, has rotated right femur of burial 105. Legs of former and left arm overlie 109, arm bones also lying beneath burials 107, 108.

Plate 135.

Burial Cluster
Frontenac Island Site
Frontenac Focus

Northern portion of burial cluster shown on Plate 134. Upper part of burial 111 exposed. Note bone dagger, lower left, bone whistle and chert point, lower right, and cluster of grave goods heaped over right arm. Fragmentary flexed adult skeleton, 113, with associated offerings, and extended child skeleton, 112, accompanied by a spherical stone pebble (Plate 149, fig. 17), flank burial 111 on either side.

Lake station, had induced the writer to postulate some measure of contemporaneity for these two oldest known New York occupations.[1] The excavations on Frontenac Island remove all reasonable doubt on this score, for the disclosed congeries is a composit of the two aforementioned entities, with the addition of novel constituents.

Components of the Frontenac Focus

Frontenac Island Component (Plate 109, site 5)

Although for a decade the Rochester Museum had been aware of the potential archaeological significance of Frontenac Island, situated in Cayuga Lake, about a mile west of Union Springs, Cayuga County, through preliminary investigations conducted in 1924 by Mr. Donald A. Cadzow, for the Museum of the American Indian, Heye Foundation,[2] permission to excavate was not obtainable until 1939, when the interest of Mr. Roger B. Spaulding of Rochester and the generosity of Mayor Clayton Smith and the village board of trustees of Union Springs, which owns the island, prevailed to overrule the objections.

A survey showed the island to be about an acre in area, geologically an anticline of Cobleskill (Upper Silurian) limestone invested with a water-laid subsoil layer of brown gravelly clay, varying from 0 to 10 inches in thickness, surmounted by a nearly homogeneous refuse mantle, 10 to 29 inches deep and thickest, like the subsoil, at the south or lower end of the island.

Excavation of nearly 3,300 square feet, or approximately two-thirds of the midden, by trenches which traversed it in all directions, disclosed no physical stratigraphy, but two occupational zones distinguished by content, the superior level relatively thin and productive of pottery and other devices not present below; some 70 hearths about a foot in diameter, situated in small depressions at sundry elevations (Plates 129, 138); 7 pits averaging about 3 feet in diameter and 2 in depth, opening, where that fact could be determined, from near the surface and containing pottery and other artifacts, also bone, mussel and land snail refuse; several heaps of large pebbles, thought to be potstones, in the deeper level (Plates 126, 128); a bed of fire-broken stones, perhaps a roasting platform; and 159 burials pertaining to the older level, with 2 possible exceptions (an intrusive flexed male, number 140-Plate 145- and a cremation in a pit, accompanied by fire-fractured rhyolite and chert blades, number 142). Of these earlier burials, all lying on or close to the bedrock, 59 were fully extended (40 or 67.8% with grave goods), 59 occupied the flexed position (22 or 37.3% with mortuary accompaniments),[3] only 2 were secondary or bundle inhumations (one with articles), while 8 had been cremated (2 or 25% with associated objects). The mode of burial of the remainder was questionable or indeterminable through pit or other intrusion. Illustrations of all burial types are afforded by Plates 125-145. Seven burials-5 extended, 2 flexed-were accompanied by skeletons of either a large or small breed of dog.

[1] Ritchie, 1940, p. 91.

[2] Cadzow, 1925.

[3] The probable explanation of this discrepancy is given below.

Plate 136. Extended and Disturbed Burials
Frontenac Island Site
Frontenac Focus

Skeleton of young adult male with heap of displaced human bones over lower right leg. This is not a bundle burial, since several other portions of the same skeleton were found under and among the bones of the extended burial, which had evidently taken the place of the earlier inhumation.

Position of grave goods shown by arrows. Note particularly bannerstone beside right femur.

Plate 137.

Superposition of Burials
Frontenac Island Site
Frontenac Focus

Flexed adult female skeleton (44B) lying beneath thorax of extended male (44A). Portions of 44B near either elbow of extended burial. Anvilstone (near right elbow) and celt in process (in right background) probably not grave goods.

Distributional analysis of the 1,409 deterministic industrial objects only, recovered from the midden shows that 79.9% of the potsherds, 54.5% of the steatite sherds, 75% of the rhyolite implements, 100% of triangular points, 58.3% of semilozenge-shaped points, and 73.3% of broad "heart-shaped" points (see Plate 146 for illustrations), came from the upper 7 inches, where were also found (in the sod line) an obtuse angle elbow pipe (Plate 146, fig. 28), a bolas-stone (Plate 146, fig. 34), gorget or pendant fragment (Plate 146, fig. 35), segment of deer metapodial beaming tool (Plate 146, fig. 18), portion of a flat, eyed, engraved needle (Plate 146, fig. 19), large antler flaking tool hollow through decay or design and possibly remade into a tool handle (see fig. 20, same plate), and 3 weak sinewstones (one reworked from a celt with bit smooth from rubbing or scraping (see figs. 32, 33, Plate 146).

Conversely, 100% of the copper articles, 85.7% of harpoons of all types, 88.9% of choppers, 90.9% of scrapers, 76.6% of narrow-bladed stemmed or side-notched points, 62.3% of broad-bladed stemmed points, 62.3% of drills, 54.8% of broad corner-notched, and 64.4% of broad side-notched points occurred below the arbitrary 7 inch level (established as the approximate level above or below which the majority of each type was present).

Considering the relative thickness of the two zones (approximately 1:2.5) certain of these figures do not seem conclusive. For example, steatite sherds; drills; semilozenge-shaped, notched, and broad stemmed points have a roughly even distribution. With respect to the former, at least, this is more apparent than real, for the single fragment at 8 inches and the two found together at 10 inches (only one sherd occurred deeper down), were associated with pottery at the south end of the site, where the total depth of the midden was greatest and the upper zone relatively and absolutely thicker. In this area, too, the larger number of artifacts assigned to the second occupation came to light. On the other hand, drills and notched points actually seem at home in both levels and were associated with diagnostic traits of each. A typological analysis of each group, however, reveals that drills with semilozenge-shaped bases (Plate 146, figs. 16, 17) were recovered only near the surface, the other forms of this implement having no stratigraphic predilection, while the notched points from the superior zone were in the main distinctively thinner and more finely chipped than those from below (Plate 146, figs. 1-5). The semilozenge-shaped and broad stemmed points offer more of a problem. Many of the former are of rhyolite and nearly all these are derived from the upper level, although specimens of chert and even limestone occurred farther down, but while never in definite association with elements of the older culture their presence with potsherds was frequently noted. They may have been in pits whose outlines were indistinguishable in the black midden soil. Possibly they constitute a feature of both cultures, inasmuch as a small number were found at Brewerton, but this seems less probable on the grounds of other evidence, chief of which is their absence as grave goods or from the soil surrounding burials at Frontenac Island. Broad-bladed straight-stemmed points, however, repeatedly occurred with burials, and their association with the older horizon at least is unquestionable. To account for the mixed typology it must be emphasized that the secondary occupation was not stratigraphically differentiated and that through pitting and probably other soil disturbances engendered by the relatively brief activities of the later people, and the uprooting of trees, intermingling of old level material with a portion of the younger debris would inevitably result. That culture succession rather than continuum with change, as seen at Brewerton, is the correct explanation, gains further confirmation from the

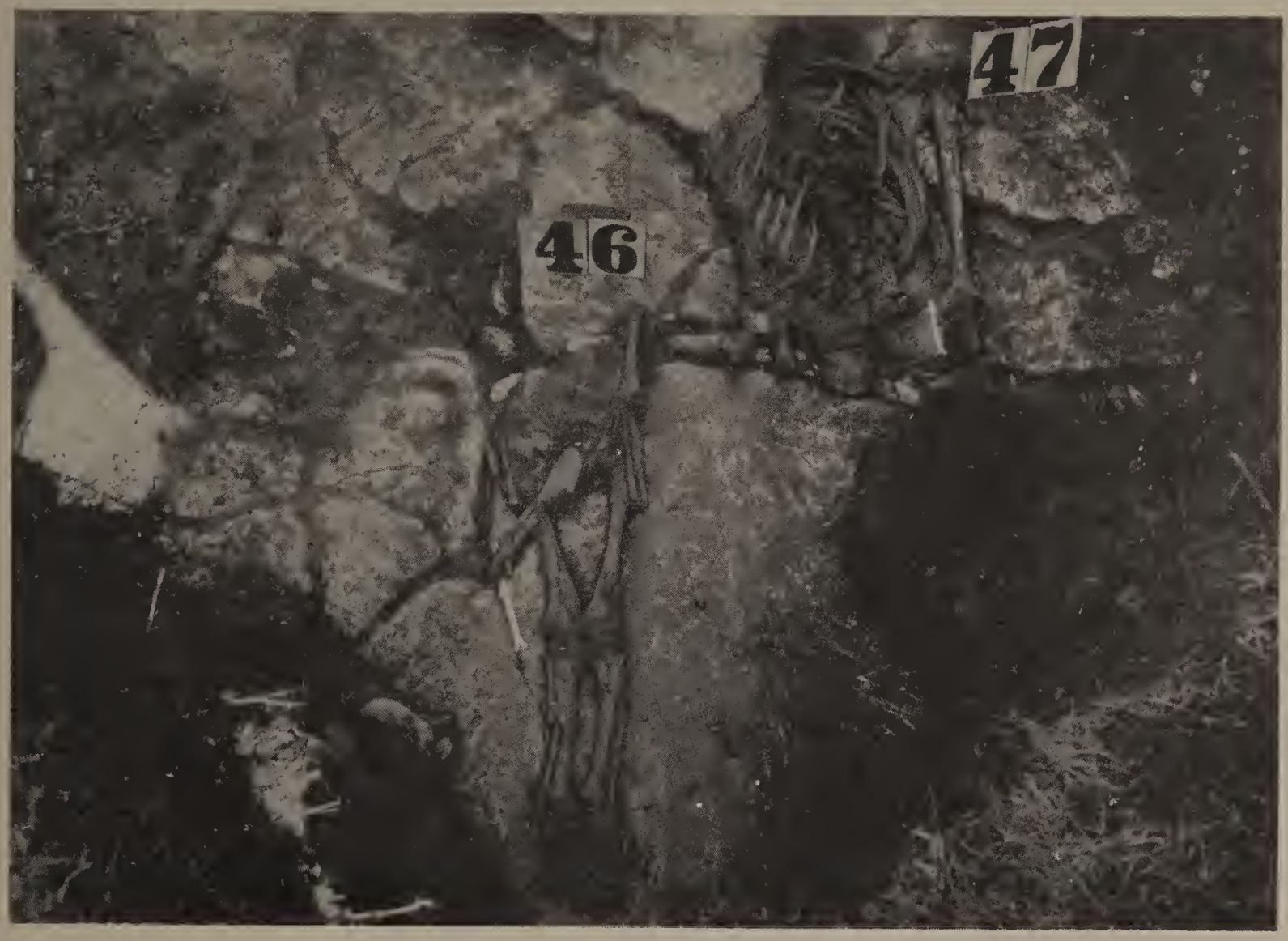

Plate 138.

Disturbed Burials and Hearth
Frontenac Island Site
Frontenac Focus

Extended child skeleton (46) accompanied by elk ulna awl; extended (?) adult female skeleton (47) has crushed carapace of wood turtle near left elbow. Lower portion of this skeleton destroyed by hearth in right foreground.

Plate 139.

Disturbed Burials
Frontenac Island Site
Frontenac Focus

Incomplete skeletons of two adult males (74A to left, B to right). Arrows indicate position of some of 17 broad stemmed points and "killed" bone dagger, from which one piece was missing, shown restored on Plate 151, fig. 1.

fact that with the exception of broad stemmed and triangular points (3 examples of the latter with 4 broad side-notched points were found with burial 5A) no significant artifact type present in the upper level occurred as funerary furnishings or on the burial level, while on the other hand, harpoons, choppers, narrow and broad side- and corner-notched and stemmed points, and drills (except the semilozenge base type) repeatedly formed part of burial accompaniments.

With the addition of non-diagnostic traits from the midden, and the mortuary articles, the industrial content of the older occupation totals 192 elements (listed with frequencies on pages 380-386 and illustrated on plates 147-152). When this assemblage is compared with established complexes, both the Lamoka and Brewerton foci are seen to be involved to about equal degree (32.1% and 30.8% correspondence, respectively). Moreover, the most deterministic traits of both cultures are present in graves and midden, viz., the narrow-bladed stemmed or side-notched point (Plate 147, figs. 1-15, 24-29), beveled adze (Plate 148, fig. 7), chopper (Plate 149, figs. 11-14), antler pendant (one fragment is identical with a highly specialized type from Lamoka Lake, having triangular decorations in intaglio and stripes of red paint) (Plate 152, fig. 26), and pendant-like artifact (Plate 152, figs. 27-30) of the Lamoka Focus; and the broad-bladed, stemmed or notched point (Plate 147, figs. 16-22, 30-51), plummet (Plate 148, figs. 13-18), bannerstone (Plate 148, figs. 9-12), harpoon with single barb and line hole (Plate 151, figs. 18-20), gouge (midden only) (Plate 148, fig. 8), and native copper and (midden only) (Plate 148, fig. 22) characteristic of the Brewerton Focus. The ground slate point, regarded by the writer as a prime diagnostic of the Laurentian Aspect, although not found in situ on stations of the Brewerton Focus, occurred both with a burial (Plate 130) and in the refuse at Frontenac Island (Plate 148, figs. 19,20). In addition, a majority of the linked traits of these two foci are also in evidence. There were recovered, however, mostly from the burials, a number of elements not known from the compared foci and in some instances unique, such as ornaments and a receptacle of marine shell (Plate 152, figs. 36-45), an effigy comb of antler (Plate 152, fig. 31),[1] bone gouges (Plate 150, fig. 31), antler spoons and a cup (Plate 151, figs. 26-28), several forms of the harpoon (Plate 151, figs. 12-17),[2] three types of the bone flute or whistle (Plate 151, figs. 29-34), ground wolf mandibles (Plate 152, figs. 12, 13), and perforated canines of the elk and bear (Plate 152, figs. 14, 15, 17-21), many of the latter from young animals, gouged through the anterior wall only into the hollow pulp chamber (Plate 152, figs. 17-19).

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[1]This remarkable specimen occurred with extended burial no. 78 (Plate 130), in association with a bone whistle (Plate 151, fig. 33), 4 drills (Plate 147, figs. 74, 78), a worked beaver incisor, antler flaker (Plate 150, fig. 20), antler tine punch, bone awl, ground slate point (Plate 148, fig. 19), rude chopper, whetstone, lump of rotted iron pyrites, and unworked clam shell. A dog's skeleton (small breed), shared with burial 79 (Plate 131), demonstrated the contemporaneity of the two interments.

[2]The fragmentary nature of the Oberlander specimens (Plate 117, figs. 8-10, 24) makes comparison with these difficult.

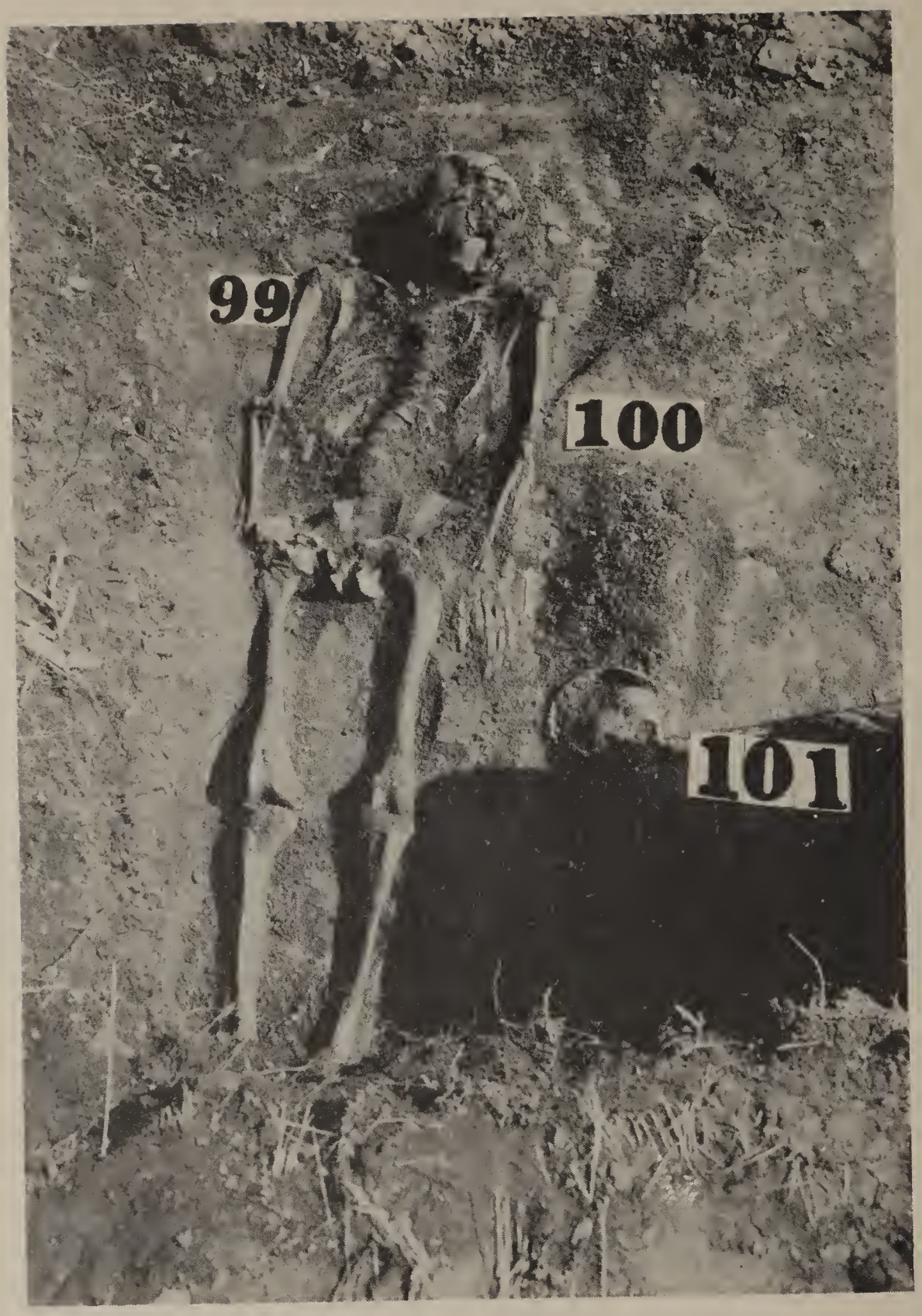

Plate 140.

Multiple Burial
Frontenac Island Site
Frontenac Focus

Two extended burials (adult male, 99, with crushed box turtle carapace over left lower arm, and child, 101) and a cremation, 100, evidently inhumed together, since latter occurs partially under and partially over arm and skull, respectively, of other two.

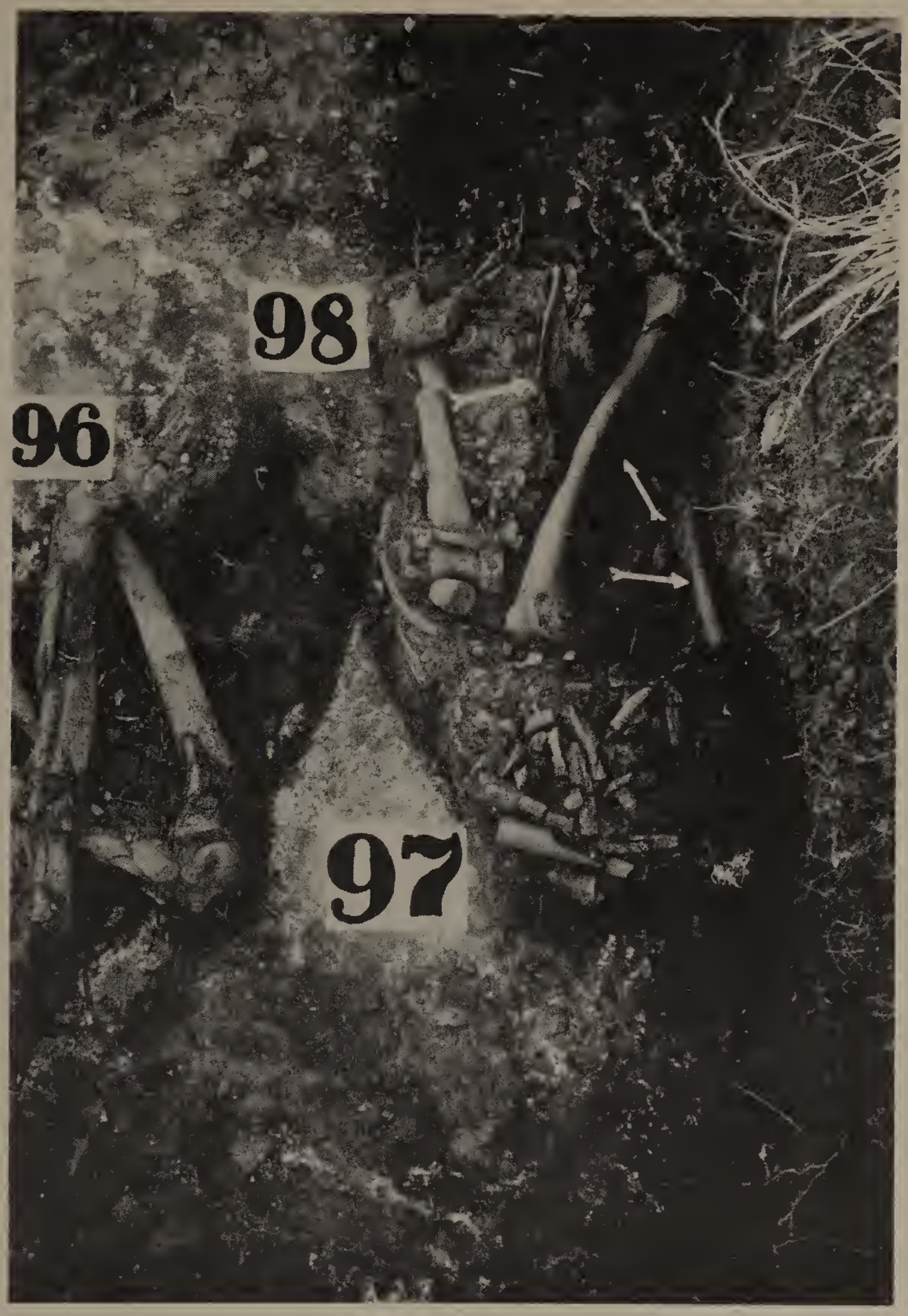

Plate 141.

Superimposed Burials
Frontenac Island Site
Frontenac Focus

Mass of cremated bones, 97, filled with red paint, rests over partially destroyed upper part of adult male skeleton, 98, closely flexed on back. Arrows indicate grave goods with latter. Antler cup, shown in Plate 151, fig. 28, and fishhook, fig. 8, same plate, occurred under right femur of this burial.

Plate 142. Multiple Bundle Burial
Frontenac Island Site
Frontenac Focus

Incomplete skeletons of two adult females accompanied by bone harpoon (Plate 151, fig. 15) and 4 worked beaver incisors (Plate 152, fig. 10).

Analysis of the grave goods by individual groups reveals 3 which are typologically referable to the Lamoka Focus; 14 to the Lamoka Focus, plus nonspecific (linked or new) traits; 4 to the Brewerton Focus; 5 to the Brewerton Focus, plus nonspecific traits; while 10 are a mixture of the deterministic traits of both foci, plus or minus nonspecific traits; and 33 consist of nonspecific elements only. Hence the contemporaneous use of all the material is indicated, a conclusion supported by the manifest synchronism of all burial practices and strengthened by the negative correlation of burial type and skull form. The former point is established by multiple interments, viz., flexed with bundle, flexed with extended, extended with cremated and flexed, and extended and cremated remains together. All these burial practices singly can be duplicated in the Brewerton Focus, where, however, grave goods are rarely present, but only flexed and bundle inhumations without mortuary offerings are recorded for the Lamoka Focus.

Craniometric studies of the restorable and mensurable skulls reveal three evidently valid groups, containing respectively 10, 21, and 14 individuals, each series being composed of approximately two-thirds male and one-third female. Group 1 is long-headed (dolichocephalic, mean cephalic index 7 males 72.0, 3 females 73.0, range male 65.9 - 75.0, female 72.3 - 73.4, average deviation male 2.3, female 0.4), high-vaulted (hypsicephalic, height-length index 82.4 [1]), long-faced (leptoprosopic, total facial index 83.3, upper facial index 55.3[2]), with medium orbits (mesoconch, mean orbital index 80.1[3]), and moderate to broad nasal aperture (mesorrhine or platyrrhine, mean nasal index 52.1, range 48.5 - 57.7, average deviation 3.7[4]). Insofar as our scanty knowledge of both is concerned, this type resembles the population of the Lamoka Focus, except for the broader nasal aperture of the former.[5]

Group 2 possesses a vault of medium length (mesocephalic, mean cephalic index 13 males 77.1, 8 females 77.5, range male 75.0 - 80.0, female 75.6 - 79.5, average deviation male 1.1, female 1.0), high or moderately so (hypsicephalic or orthocephalic, mean height-length index 10 males 76.4, 5 females 74.9, range male 72.9 - 80.2, female 72.8 - 77.3, average deviation male 1.9, female 1.7), a prevailingly medium to low face (mesoprosopic or euryprosopic, mean total facial index 3 males 84.4, 2 females 80.5, range male 83.3 - 86.5, female 75.7 - 85.3, average deviation male 1.4), coupled with orbits of moderate size (mesoconch, mean orbital index 5 males 81.0, 3 females 81.0, range male 75.6 - 85.3, female 79.0 - 83.7, average deviation male 2.5, female 1.8), and a medium to broad nose (mesorrhine or platyrrhine, mean nasal index 5 males 48.0, 3 females 51.9, range male 44.4 - 52.0, female 50.9 - 53.0, average deviation male 1.8, female 0.7).

Group 3 is broad-headed (brachycephalic, mean cephalic index 9 males 81.8, 5 females 80.8, range male 80.2 - 82.9, female 80.2 - 81.2, average deviation male 0.8, female 0.4), high-vaulted (hypsicephalic, mean height-length index 5 males 76.4, 3 females 79.4, range male 70.9 -

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[1] 1 female example only.

[2] 1 male example only.

[3] 2 male examples.

[4] 3 male examples.

[5] Ritchie, 1936 a, p. 18.

Plate 143. Multiple and Superimposed Burials
Frontenac Island Site
Frontenac Focus

Double burial of extended adult males, 83, 84, which had disturbed previous extended burial 85. Lower arms and legs of flexed (?) burial 90 evidently destroyed by burial 85.

Plate 144.

Superimposed Burials
Frontenac Island Site
Frontenac Focus

Portions of the leg bones of two parallel extended adult burials, 123, 124, may be seen in the foreground, the upper portions of which were destroyed by a large intrusive pit, in whose fill extended burial 122 was made. The lower legs of this skeleton were subsequently removed by a hearth.

Plate 145.

Intrusive Burial
Frontenac Island Site
Frontenac Focus

Extended male burial 141, has been largely destroyed by the intrusion of burial 140, also an adult male, flexed in an unusual manner. Grave goods, consisting of two broad stemmed points and a worked beaver incisor accompany 141. No mortuary offerings occur with 140.

81.8, female 78.6 - 81.1, average deviation male 2.7, female 1.1), low-faced (euryprosopic, mean total facial index 4 males 81.2, 4 females 80.5, range male 79.0 - 84.0, female 78.1 - 83.2, average deviation male 1.6, female 1.4), has moderate to high orbits (mesoconch or hypsiconch, mean orbital index 4 males 83.2, 4 females 84.0, range male 77.2 - 88.7, female 81.5 – 85.0, average deviation male 4.1, female 1.5), and a broad nasal aperture (platyrrhine, mean nasal index 4 males 50.3, 4 females 52.8, range male 48.1 - 52.0, female 47.9 - 57.7, average deviation male 1.2, female 3.3).

There is a suggestion that 2 is the hybrid product of 1 and 3, which might theoretically be expected if two physically and culturally different groups combined. Type 2, however, is morphologically more closely related to 3 than to 1, and may be a normal variant thereof. Mesocephals and brachycephals (no facial data possible), but no dolichocephals, are known from the Brewerton Focus.[1]

As stated, no correlation exists between cranial type and mode of burial; approximately the same number of dolichocephals were flexed (3) as extended (4); mesocephals flexed (9), extended (10), bundle (2); brachycephals flexed (5), extended (7), bundle (1).

However, when burial practice, occurrence, and typology of grave goods are compared a positive correlation is indicated. Thus, grave goods typologically of the Lamoka Focus ± nonspecific traits were associated with 13 flexed and 4 extended burials; of Brewerton ± nonspecific traits with 8 extended and 1 bundle burial, and of mixed Lamoka and Brewerton ± nonspecific traits with 10 extended burials. Also, be it remembered, mortuary accompaniment was almost twice as frequent with extended as with flexed interments, a fact having no relation to sex, as studies showed.[2] Perhaps the most logical explanation is the assumption of a mixed but only partially integrated population, in which old traits and customs still prevailed in combination.

Returning to the top level culture, it may be said that whether or not the suspected intrusive burials be included, the complex can be absorbed quite readily into the Point Peninsula Focus. Compared with the total series from the Vinette site (see pages 160-166 and Plates 74, 75) they correspond without remainder, except for the few bone types, not present at the latter site because of soil acidity, but recorded for other components of this focus.

In conclusion, the sundry and rather ample data on the Frontenac station evidently connote two superimposed components separated by an indeterminable time span, the superior level apparently referable to the Point Peninsula Focus and probably contemporaneous with the Vinette site, the older horizon a composit manifestation of the Lamoka and Brewerton foci, plus significant traits not known for either. Since all artifacts exist inextricably intermixed in both midden and graves of the older level there is indicated a single occupation, characterized by diverse burial practices and physical types. Inasmuch as typologically Lamoka Focus material is most closely associated with flexed burials and Brewerton or mixed Lamoka and Brewerton traits prevail with extended burials, the partial persistence of old culture patterns seems probable.

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[1] Ritchie, 1940, pp. 60, 93.

[2] 8 of 15 flexed males, 10 of 18 flexed females, had associated grave goods.

Plate 146. Representative Artifacts from Upper Level
Frontenac Island Site
Point Peninsula Focus

1-3, side-notched points; 4, 5, corner-notched points; 6-10, "heart-shaped" points; 11-15, 21-26, semilozenge-shaped points; 16, 17, drills with semilozenge-shaped base; 27, fragmentary drill worked from side-notched point; 18, portion of deer metapodial beaming tool or draw-shave scraper; 19, segment of ornamented flat needle; 20, deer antler tool handle (?); 28, pottery pipe of obtuse angle elbow type; 29, 31, triangular points or knives; 30, triangular point with concave base; 32, combined sinew and anvilstone; 33, celt showing secondary use as sinewstone; 34, bolas-stone; 35, gorget or pendant fragment; 36, rim potsherd with rocker-stamp design; 37, rim potsherd with incised design; 38, potsherd with cord-impressed surface; 39, potsherd with dentate-impressed triangle design; 40, fabric- or cord-impressed rim sherd; 41-43, 47-52, rim sherds (except 49) ornamented with dentate-stamp impressions; 44-46, rim sherds of steatite vessels, 44, has weak lug.

Material of chipped stone objects chert, except 13, 15, 16, 21, 26, which are of rhyolite, and 25, which is of limestone.

Plate 147. Chipped Stone Implements from Midden and Burials
Frontenac Island Site
Frontenac Focus

1-14, narrow, stemmed projectile points (2 is embedded in exostosis of ossified intercostal cartilage attached to human rib, from burial 102); 15, narrow, stemmed point, from flake, edges only chipped; 16-22, broad, stemmed points (16 from burial 139); 23, broad, stemmed point, from flake, edges only chipped; 24-29, narrow, side-notched points; 30-42, broad, side-notched points; 43, broad, side-notched point, from flake, edges only chipped; 44, side-notched point, bifurcated stem; 45, 46, eared side-notched points; 47-51, corner-notched points (47, 48 from burial 117); 52-54, triangular points, with straight base (burial 5); 55, broad, stemmed spear point; 56, flake knife, retouched edges; 57, knife, from thick prismatic flake, edges retouched; 58, knife, from thin, retouched, prismatic flake; 59, knife, from side-notched flake, edges retouched; 60, knife, from stemmed flake, retouched edges; 61, knife, ovate, chipped all over; 62, knife, trianguloid, chipped all over; 63, knife, corner-notched, convex edges; 64, ovate end scraper; 65, scraper, double-ended, plano-convex; 66, 67, stemmed scrapers; 68, crescentic end scraper; 69, side-notched end scraper; 70, corner-notched end scraper; 71, drill, based on rough spall; 72,73, straight drill; 74, drill, tapered base (burial 78); 75, 76, drills, expanded base; 77, drill, expanded corner-notched base: 78, drill, side-notched base (burial 78); 79, drill, expanded stemmed base; 80, 81, drills, T-shaped base; 82, drill, T-shaped, eared base; 83, rude, oval cache blade; 84, narrow, rectanguloid blade section, with parallel flaking.

Material: All chert, probably from Onondaga limestone.

Plate 148. Polished Stone and Copper Artifacts from Midden and Burials
Frontenac Island Site
Frontenac Focus

1, rectanguloid celt (burial 65); 2, rectanguloid celt, with expanded bit; 3, rectanguloid celt, with contracted bit; 4, rectanguloid plano-convex adze; 5, trianguloid plano-convex adze; 6, 7, beveled adzes (7 from burial 24); 8, short, broad gouge; 9-11, bannerstones of crescentic form, in process (11 is roughly ground and partially perforated); 12, fragmentary bannerstone (from burial 66); 13, ovate plummet, with grooved top; 14, elongate plummet, with grooved top; 15, elongate plummet, grooved around and over top (burial 81); 16, elongate plummet, with circular, flat, expanded top (burial 79); 17, elongate plummet, with oval, keeled, expanded top, notched on either side (burial 65); 18, elongate plummet, with rounded, expanded top; 19, ground slate point, with broad blade and straight stem (burial 78); 20, ground slate point, with narrow blade and serrated stem; 21, fragment of incised ground slate ulo (?); 22, native copper awls; 23, foliated copper fragment.

Material: 1, 4, 6, 19-21, slate; 2, phyllite; 3, 12-17, limestone; 5, 8, 9, basalt; 7, andesite; 10, shale; 11, sandstone; 18, syenite.

Plate 149. Rough Stone Implements, Chiefly Midden Finds
Frontenac Island Site
Frontenac Focus

1, unpitted pebble hammerstone; 2, bipitted pebble hammerstone; 3, anvilstone; 4, pitted stone (2 pits); 5, whetstone, tabular form (burial 66); 6, whetstone, tabular form, with incised lines on face; 7, whetstone, from tongue-shaped pebble; 8, pestle, from concretion; 9, muller; 10, combined muller and hammerstone; 11, chopper, amygdaloid; 12, chopper, rectanguloid; 13, chopper, hoe-shaped; 14, chopper, irregular; 15, hematite paintstone, ground facets; 16, naturally perforated pebble (burial 135); 17, spherical limestone pebble (burial 112); 18, lump of decomposed iron pyrites, for fire-making (burial 94); 19, cylindrical pestle.

Of the several hypotheses formulated in the light of the evidence, the one best supported by the facts holds that the older level represents a continual or more probably intermittent (seasonal ?) inhabitation by a single group, formed from the amalgamation of physically and culturally different bands on the same economic level, pertaining respectively to the Brewerton and Lamoka foci, or perhaps more accurately to the Laurentian and an unnamed aspect also of the Archaic Pattern. The appreciable number of new traits, to say nothing of the peculiar combination of others, confers focal status upon the manifestation; thus in terms of the Midwestern Taxonomic Method applied by the writer to New York, it may be designated the Frontenac Focus of an undetermined aspect and phase of the Archaic Pattern. We may suspect that in our culture sequence it provides the stopgap between the two oldest ascertained occupations, the Brewerton and the Lamoka, now to be summarized.

Craniometric Data

(See discussion in text, pages 283, 287)

Lamoka Focus, ? Aspect, ? Phase, Archaic Pattern

Evidence of at least partial coevality for the Brewerton and Lamoka foci is afforded by the Frontenac Focus, as just described, but stratigraphic proof of the priority of either is still wanting. Inasmuch as the Brewerton components grade into a ceramic level while pottery has still to be found, except intrusively, on a station of the Lamoka Focus, greater antiquity has been postulated for the latter. Throughout their interdigitating range in western New York (See Plates 109 and 153) occur occasional intermixed or more commonly small closed surface sites of both occupations, lacking refuse deposits, and often situated contiguously on the same terrace or group of knolls bordering a lake or stream, a fact seemingly indicative of separate time intervals. The scanty distribution of Lamoka traces in eastern New York, however, where the dominant Vosburg Focus apparently constitutes the equivalent of the Brewerton, suggests that this territory may already have been in the hands of Laurentian people when the Lamoka wave of population swept eastward across New York. Another, and perhaps more plausible explanation, is that the thin scattering of Lamoka folk who had reached the lower Mohawk Valley, were expelled by incoming Laurentians who later absorbed some of them, as seen at Frontenac Island, and who subsequently established settlements in the abandoned territory of Lamoka people in western New York. That the route of dissemination of the Lamoka culture was eastward from the Niagara Peninsula is shown by the surface distribution of the most diagnostic tool type, the beveled adze (Plate 154, figs. 43, 49) which is present in some numbers along the north shore of Lakes Erie and Ontario, decreasing rapidly as the St. Lawrence is reached. It is associated with a definite complex containing the narrow-bladed point (Plate 154, figs. 1-13) and chopper (Plate 155, figs. 8-11), on numerous small surface sites in western and central New York; growing scarcer in the eastern and southern portions of the state where, however, camp sites are known along the course of the Susquehanna River well down into Pennsylvania, as well as about the source of the Genesee River in Potter County of the same state (Plate 153).

Plate 150. Bone and Antler Implements, Mainly Burial Goods
Frontenac Island Site
Frontenac Focus

1, awl, rough splinter; 2, awl, polished splinter (burial 111); 3, awl, splinter, notched base (burial 24); 4, awl, splinter, perforated base (burial 134); 5, awl, deer ulna (burial 111); 6, awl, elk ulna (burial 19); 7, awl, deer metapodial, condyle intact (burial 57); 8, awl, split deer metapodial (burial 111); 8, awl, deer scapula (burial 11); 10, awl, splanchnic bone raccoon; 11, awl, turkey radius (burial 77); 12, awl, turkey tarsometatarsus, with spur core (burial 17); 13, double-pointed awl, bird bone; 14, double-pointed implements (burial 111); 15, eyed needle (burial 28); 16, awls, unidentified species birds and mammals (specimen on right from burial 98); 17, flaker, deer antler tine; 18, flaker, section long bone, edges chipped (burial 98); 19, flaker, long bone section (burial 24); 20, 21, flakers, antler, cylindrical in section (20 from burial 78; 21 from burial 71); 22, 23, flakers, antler, rectangular in section (22 from burial 66; 23 from burial 71); 24, 25, scrapers, deer scapula (24 from burial 98; 25 from burial 71); 26, punch, deer antler (burial 66); 27, wedge or chisel, deer antler; 28, knife, deer ulna (burial 65); 29, knife, long bone section; 30, arrowshaft straightener, from complete deer antler, two perforations (indicated by arrows) (burial 37); 31, gouge, from split long bone section.

Plate 151. Bone and Antler Artifacts, Mainly Burial Goods
Frontenac Island Site
Frontenac Focus

1, 2, daggers (hilt of 2 striped with red paint) (1 from burial 74, evidently "killed" and one piece lost, restoration accurate since edges meet on left side; 2 from burial 111); 3, gorges (burial 94); 4, fishhook fragment, from curved bone, straight shank (burial 102); 5-8, fishhooks, from flat bone, grooved or knobbed shank (5, 6, from burial 66; 7, from burial 24; 8 from burial 98); 9, 10, process pieces in fishhook manufacture, from curved bone sections; 11, fishhook blank, of flat bone; 12, harpoon, with single unilateral barb; 13, harpoon fragments, with multiple unilateral barbs closely spaced; 14-16, harpoons, with multiple unilateral barbs widely spaced (15 from burial 31; 16 in grave 40); 17, harpoon fragments, with multiple bilateral barbs; 18-20, harpoons, with single barb and line hole (18 from burial 66; 19, 20 from burial 111); 21, flat tapered harpoon tang; 22, flat expanded harpoon tang; 23, plano-convex harpoon tang; 24, conical antler arrowpoint; 25, flat, lanceolate, bone arrowpoint; 26, fragmentary antler spoon with effigy top (burial 19); 27, antler spoon (burial 81); 28, cup, from base of elk antler (burial 98); 29, whistle, with single oval perforation (burial 77); 30, 31, whistles with single oval and single opposite round perforation (31 ornamented with triangles in intaglio) (30 from burial 113; 31 from burial 111); 32, 33, whistles, with single oval and multiple round perforations (32 from burial 59; 33 from burial 78); 34, whistle, with multiple round perforations; 35, 36, tubes of bird bone (35 from burial 77).

Plate 152. Bone, Antler and Shell Artifacts, Mainly Burial Goods
Frontenac Island Site
Frontenac Focus

1, 2, plume holders (?), from perforated deer styliform bone (1 from burial 76; 2 from burial 66); 3, plume holder (?), from long bone splinter (burial 71); 4, porcupine incisor, edge chisel-shaped (burial 57); 5, 6, beaver incisors, split, long edge ground; 7, beaver incisor, whole, distal portion ground, edge chisel-shaped; 8, beaver incisor, whole, lower lingual surface gouge-shaped; 9, beaver incisor, whole, lower lateral surface deeply hollowed out (burial 24); 10, beaver incisor, whole, edge chisel-shaped (burial 31); 11, beaver incisor, whole, lateral surface ground flat (burial 132); 12, 13, wolf mandibles (2 pairs), rami cut away, base ground (13 from burial 105); 14, perforated bear canine (burial 29); 15, perforated wolf canine; 16, wolf molar, root ground (burial 66); 17-19, canines of immature bear, perforated though anterior wall (burial 19); 20, 21, perforated elk canines (burial 4); 22, perforated small mammal canine; 23, claw core of hawk (burial 94); 24, claw core of bear (burial 111); 25, rattle, from box turtle shell (small quartz pebbles found within) (burial 80); 26, fragment of antler pendant, decorated with stripes of red paint and triangles in intaglio; 27-30, split deer tine objects, edges nicked or tallied (27 from burial 61; 28 from burial 111); 31, antler comb, with effigy top (burial 78); 32, worked section pronghorn antler; 33, squared and nicked section of antler beam; 34, fragmentary bone artifact, ornamented with incised triangle design; 35, line-decorated portion of antler flaker; 36, oyster shell pendant (burial 23); 37, rectangular pendant, from conch shell section; 38, 39, pyriform conch shell pendants (burial 82); 40, 41, pendants or ornaments of conch shell (40 and lower left of 41 from burial 82; rest of 41 from burial 94); 42, worked piece of conch shell (burial 81); 43, receptacle, from large end of conch shell (burial 81); 44, Marginella shell beads, covered with red paint (burial 8); 45, fresh water mussel valve filled with red paint (burial 57).

The scarcity of pits, usually sterile, and absence of middens on these sites, which normally yield only a few choppers, beveled and plano-convex adzes, rude celts, netsinkers, and numerous small points, argue for the limited nomadism of a hunting-fishing-collecting people; a picture unaltered by the data supplied by the 3 refuse-bearing stations found and excavated by the Rochester Museum in western New York, one of which, the type site near Lamoka Lake, Schuyler County, was of large size and exceptional richness, and therefore afforded an ample perspective of the economy of this early period.

From the vast quantity of refuse bone, mainly of the deer, on this site, it is clear that animal food constituted the bulk of the diet. Chief among the hunting gear on all components are abundant short points, probably for arrows, and much less frequent javelin (?) and spearheads, all preponderantly of a single pattern, viz., narrow with straight or side-notched stem (Plate 154, figs. 1-13). Certain exceptions to this type may be knives rather than projectile points, since the broad blades are often convexly edged. At Lamoka Lake they constituted only 1.6% of all points, at Geneva 14.3%, and at Woodchuck Hill 3.8% (Plate 154, figs. 14, 15, 26, 27). In all essential respects they resemble typical Laurentian forms and they may, in fact, have been inspired from this quarter.

Burials of a small breed of terrier-like dog, probably an aid in the chase, occurred at the Geneva site, but only worked teeth of this animal came to light at Lamoka Lake.

What may, by analogy with Northwest coast specimens, be trap sticks, are pictured on Plate 159, figs. 32-35. All are fragmentary, are made from pronghorns of the deer, have ornamented heads, often in the effigy of an animal and, where that portion is preserved, exhibit a broad well-worn groove upon one side.

Fishing devices comprise the hook, made either by scraping a curved section of bird bone (Plate 160, figs. 2-4) or whittling down a relatively flat piece of mammal long bone (Plate 160, fig. 5); gorge (Plate 160, fig. 1) and, by inference from the flat notched "sinker" (Plate 155, fig. 12), the net. Only one harpoon head, of single barb and line hole type (Plate 160, fig. 9), is known. Found 23 inches deep in the Lamoka Lake refuse, it constitutes one of the strongest links with the Brewerton Focus, of which it is apparently typical (See Plates 117, fig. 24; 151, figs. 18-20 for specimens from the Oberlander, number 1 and Frontenac Island sites).

Unequivocally the best cultural marker is the beveled adze, usually symmetrically fashioned, by pecking, grinding, and polishing, from a compact crystalline rock (Plate 154, figs. 43, 49). This, too, has turned up sporadically in a battered or reworked state in the Brewerton Focus (Oberlander site, number 1) and one example (Plate 148, fig. 7) is from a burial on Frontenac Island.

Until the summer of 1937 the chopper, a rough sandstone or limestone implement, usually only marginally flaked and never polished (Plate 155, figs. 8-11), was considered an exclusive trait of the Lamoka Focus, but its subsequent recovery in large numbers at Brewerton and Frontenac Island makes it rather a linked trait of all three foci, probably originating with the Lamoka Focus, since it is relatively rare on Vosburg sites and absent still farther east at Vergennes, Vermont, while common in western New York.

Another class of objects, certainly most at home in and probably also native to the Lamoka Focus, are the so-called pendants and pendant-like artifacts, illustrated on Plates 172,

MAJOR COMPONENTS AND DISTRIBUTION OF THE ARCHAIC PATTERN
LAMOKA FOCUS

1. Lamoka Lake, Schuyler Co.
2. Geneva, Seneca Co.
3. Scottsville (Woodchuck Hill), Monroe Co.

Plate 153. Major Components and Distribution of the Lamoka Focus, ? Aspect, ? Phase, Archaic Pattern

173.[1] They are invariably fabricated from a section of antler, by chopping or in some cases by burning away the undesired portions, then grinding the section smooth. A variable number of nicks or notches, rarely equal on the two edges of the same piece, is always present on the finished specimen. Those classified as pendants are perforated at the narrow end and the convex outer surface is sometimes embellished with triangular designs in intaglio (Plates 160, fig. 40; 161, fig. 10).[2] More frequently the apex is ground to a blunt rounded point (Plate 161, fig. 8); an even, almost chisel-edge (Plate 161, fig. 6); or is roughly truncated (Plate 161, fig. 5).[3] Vigorous usage or deliberate intent has broken many, but not infrequently the basal piece was reworked by smoothing over the fracture plane (Plate 162, figs. 7, 8).

Six specimens of a total of 124 intact or broken articles of the class under consideration from Lamoka Lake are decorated with oblique bands of red paint applied either to the convex surface or spirally around the piece (Plates 160, fig. 49); 161, figs. 1, 3, 4, 7). One painted fragment, in addition to 3 plain sections, was recovered at Geneva (Plate 162, figs. 1-3), while the Woodchuck Hill station yielded 4 imperfect and unpainted specimens (Plate 162, figs. 4, 5).

Associated on these components with the traits already enumerated, is a somewhat monotonous bone and antler industry (listed on pages 389-394 and illustrated on Plates 158 - 160), comprising awls of sundry kinds; double-pointed bone implements; scrapers made from deer scapulae; bone knives; weaving or netting tools (?); whistles; tubes; beads; worked teeth of the bear, dog, beaver and porcupine; antler punches and chisels; perforated deer astragali; drilled heads of deer and elk scapulae; and objects of lesser note.

Additional elements of the stone congeries (see pages 387-388 and Plates 154-157) are the shallow mortar; muller; cylindrical pestle; large stationary whetstone; hammerstones of several sorts; the anvilstone; rude, flat, rectanguloid or trianguloid celt and plano-convex adze, adze-like scraper; chipped drill; and very rarely the scraper. While the grinding stones suggest the use of agricultural products not the slightest trace of such has come to light, but quantities of carbonized acorn shells and a much smaller volume of charred nuts of several species were found at Lamoka Lake, indicating that wild vegetal foods were utilized.

Cooking must have been accomplished in perishable utensils, as great numbers of burned and fire-fractured stone or "pot-boilers", but not a scrap of pottery or steatite vessel, occur on stations of this focus.

To these negative traits must be added the smoking pipe, native copper and shell objects, "problematical" forms, semilunar knife and point of ground slate, gouge, plummet, and grooved axe The absence of so many elements of the more advanced New York occupations, especially ceramics and agriculture, has led to the relegation of the Lamoka complex to the third pattern

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[1]Their limited occurrence on the Oberlander, number 1 and Frontenac Island stations has already been considered.

[2]A painted fragment of this kind (Plate 152, fig. 26) and a whistle bearing identical decorations (Plate 151, fig. 31) came from Frontenac Island.

[3]Two complete examples of this type occurred at Frontenac Island (Plate 152, figs. 27, 28).

Plate 154. Chipped and Polished Stone Implements
Lamoka Focus

6, 10, 16, 23, 26, 28, 29, 39, Scottsville site; 12, 17, 18, 21, 30, 33, 38, Geneva site; others Lamoka Lake site.

1-6, narrow stemmed projectile points; 7-13, narrow side-notched projectile points; 14, 15, broad side-notched projectile points; 16, narrow side-notched projectile point, with bifurcated stem; 17, broad bifurcated stemmed point; 18, triangular point; 19, narrow stemmed spearpoint; 20, narrow stemmed spearpoint, with expanded base; 21, broad side-notched spearpoint; 22, trianguloid spear point; 23, flake knife, with retouched edges; 24, ovate knife; 25, lanceolate knife; 26, broad side-notched knife; 27, side-notched flake knife, with retouched edges; 28, ovate end scraper; 29, stemmed end scraper; 30, side-notched end scraper; 31, drill, based on rough spall; 32, straight drill; 33, double-pointed drill; 34, drill, with expanded base; 35, drill of expanded side-notched base type; 36, drill, with side-notched base; 37, drill, with T-shaped base; 38, stemmed base drill; 39, aberrant chipped form; 40, 46, rectanguloid celts; 41, trianguloid plano-convex adze; 42, 48 rectanguloid, plano-convex adzes; 43, 49, beveled adzes; 44, 50, adze-like scrapers; 45 abradingstone (?); 47, trianguloid celt.

Material: All chipped stone implements of gray Onondaga chert except 19-22, of gray slate. 40, 41, 47, limestone; 42, 45, 46, sandstone; 44, slate; 43, 48, 50, basalt; 49, andesite.

Plate 155. Rough Stone Artifacts
Lamoka Focus

4, 5, 12, Geneva site; 8-10, 13, 20, Scottsville site; others Lamoka Lake site.

1, unpitted pebble hammerstone; 2, bipitted pebble hammerstone; 3, ovate hammer or club head; 4, anvilstone; 5, bipitted stone; 6, tabular abradingstone; 7, abradingstone with incised lines on face; 8, amygdaloid chopper; 9, oval chopper; 10, rectangular chopper; 11, hoe-shaped chopper; 12, notched netsinker; 13, hematite paintstone; 14, perforated pebble; 15, grooved club head (?); 16, sinker (?), from oval pebble with grooved sides; 17, cylindrical pestle; 18, bowl-shaped mortar; 19, bolas-stone; 20, incised fragment.

Material: All sandstone except 3, of monzonite and 17, of limestone.

Plate 156.

Abrading and Milling Stones
Lamoka Lake Site
Lamoka Focus

1, stationary whetstone, probably for shaping and sharpening celts and adzes, bottom of depression grooved; 2, single trough-shaped mortar; 3, double trough-shaped mortar.
Material: 1, sandstone; 2, 3, limestone.

Plate 157.

Muller and Double Mortar
Lamoka Lake Site
Lamoka Focus
Length of fig. 2 is 16 inches

Material: Sandstone.

on rough spall; 32, straight drill; 33, double-pointed drill;

the Archaic, along with the Frontenac and Brewerton foci. Pending the acquisition of further data, the aspect and phase remain anonymous (Plate 1).

Components of the Lamoka Focus

Lamoka Lake Component (Plate 153, site 1)[1]

In 1925, excavations began on the largest of the three known Lamoka village sites, situated on a low, level, gravel terrace bordering the east bank of the small stream connecting Lamoka and Waneta lakes, in Schuyler County. For four seasons, through the kindness of Mr. Frank Wood, proprietor, work was continued until nearly three acres had been explored. Hundreds of small hearths at all levels, 380 refuse-filled pits, 13 large ash or fire beds (up to 55 feet long, 10 feet wide and 3 feet thick), and numerous areas 12 to 18 feet across, consisting of hard-packed laminated sand, ash, and black earth, thought to represent lodge floors, all complexly interrelated, were exposed in the large midden, upbuilt to a general thickness of 4 feet, from which over 14,200 artifacts of stone, bone, and antler were removed. (Trait table on pages 387-394). Occasional scattered flexed burials occurred, but the disposition of what must have been a large number of dead remains unaccounted for.

Over a portion of the surface and intruding superficially into the older strata were thin refuse accumulations, 8 pottery-producing refuse pits, and 3 flexed burials, pertaining to a later phase of occupation as determined by their stratigraphic position and typological character. This radically different material from midden, pits, and graves, illustrated on Plate 52, comprises the grooved axe; gorget; bannerstone; sinewstone; broad-bladed point; thick cache blade; marine shell beads of several kinds; red ochre; and rude, thick, grit-tempered, straight-or nearly straight-sided, conoidal-based pots, with cord surfacing, punctate and dentate-stamp decorations in linear, herringbone, and rocker-stamp design (one sherd is plain rocker-stamped, leaving an incised line).

The cranial type of the 3 skulls is likewise at marked variance with the older Lamoka forms, being broad (brachycephalic, mean cephalic index, 81.7), high-vaulted (hypsicephalic, mean height-length index, 76.6), low-faced (euryprosopic, mean total facial index, 83.0), with medium orbits (mesoconch, mean orbital index, 79.1) and broad nasal aperture (platyrrhine, mean nasal index, 52.1).[2]

Although too little was recovered from the secondary occupation to permit cultural attribution, the presence of the grooved axe, gorget, bannerstone, sinewstone, and vessel of this order suggest the "Early" Focus, Coastal Aspect. On the other hand, the physical type fails to conform to the short Coastal series (see page 112), resembling rather the brachycephalic element

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[1]Ritchie, 1932.

[2]Ritchie, 1932, pp. 120-124, 130-134.

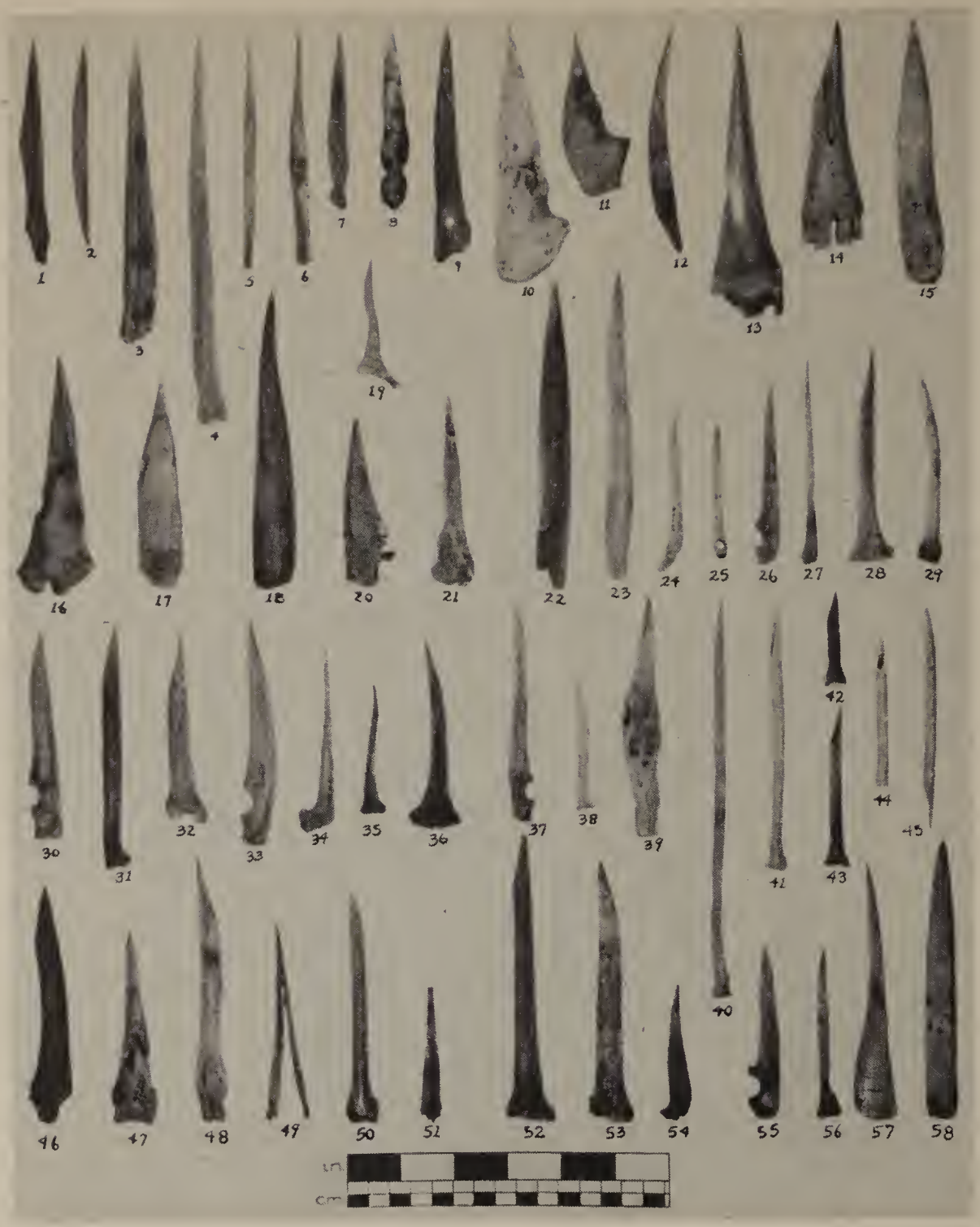

Plate 158. Bone Awls
Lamoka Focus

8, 51, Scottsville site; others Lamoka Lake site.

1, 2, rough splinter; 3-6, ground or polished splinter; 7, 8, splinter, notched base; 9, splinter, perforated base; 10, 11, deer ulna; 12, from distal portion of deer ulna; 13, deer tibia; 14, from deer metapodial, condyle intact; 15, from split deer metapodial; 16, deer radius; 17, 18, deer scapula; 19, from cornu of deer hyoid bone; 20, deer mandible; 21, bear fibula; 22, bear tibia; 23, from splanchnic bone of bear; 24, from splanchnic bone of raccoon; 25, same, with basal perforation; 26, raccoon ulna; 27, raccoon fibula; 28, raccoon tibia; 29, raccoon radius; 30, lynx ulna; 31, lynx radius; 32, lynx tibia; 33, beaver ulna; 34, beaver fibula; 35, immature muskrat or beaver tibia; 36, otter (?) tibia; 37, fox ulna; 38, fox radius; 39, pathological mammal long bone; 40-44, turkey radius (44, condyle cut off); 45, turkey radius, pointed both ends; 46, turkey ulna; 47, turkey tibia; 48, turkey tarsometatarsus; 49, blue heron mandible; 50, humerus of brant or goose; 51, dorsal fin spine of large fish (?), basal perforation; 52-56. from long bones of unidentified mammals and birds; 57, 58, polished splinter, ornamented with nicked edges or engraved lines.

Plate 159. Bone and Antler Artifacts
Lamoka Focus

3, 7, 30, 31, Scottsville site; others Lamoka Lake site.

1-3, double-pointed implements (flat or rounded in section); 4, similar, but grooved near one end; 5, similar, but scored near one end; 6, thin, curved, imperforate needle (in process); 7, antler tine flaker (partially carbonized); 8, flaker, from long bone section, edges chipped; 9, flaker, from spine of deer scapula; 10, deer scapula scraper; 11, deer antler punch; 12, chisel or wedge, from deer scapula; 13, chisel or wedge, from deer antler tine; 14, 15, deer ulna knives; 16, knife, from long bone section; 17, knife, from distal portion deer ulna, side-notched base; 18, knife, from whole bird bone; 19, deer scapula knife; 20, arrowshaft straightener, from deer antler tine; 21, dagger segment, from mammal long bone triangular in section; 22, stiletto-like dagger, from long bone, round in section; 23, stiletto-like dagger, from bear ulna, round in section, striped with red paint; 24, dagger, from long bone, trianguloid in section; 25-29, flat, ellipsoidal weaving tools (?) (25, in process; 26, 27, fragmentary, centrally perforated near one edge); 30, 31, spindle sockets (?), from deer astragali; 32-35, pronghorn antler objects (trap sticks ?) (head ornamented with nicks or animal effigy, deep saddle-shaped depression on side near center, end bluntly pointed).

Plate 160. Bone and Antler Artifacts
Lamoka Focus

4, Scottsville site; others Lamoka Lake site.

1, gorges; 2, fishhook, from curved bone, straight shank; 3, 4, same, with knobbed shank; 5, fishhook, from flat bone, grooved shank; 6-8, fishhooks in process from curved or flat section of bird or mammal long bone; 9, harpoon, with single barb and line hole; 10, conical antler arrowpoint; 11, flat, trianguloid, bone arrowpoint; 12, whistle, with single oval perforation; 13, whistle, with multiple round perforations; 14-16, plume holders (?), from deer styliform bone (14, unmodified, except for basal perforation; 15, base perforated, end sharpened; 16, unmodified, except for side-notched base); 17, tubes of bird bone, varying lengths and diameters; 18, tubular beads of bird bone; 19-23, beaver incisor cutting or scraping tools (19, split, long edges ground; 20, whole, root truncated, distal portion ground, chisel-shaped edge; 21, whole, lower lateral surface gouge-shaped; 22, whole, root truncated, edge chisel-shaped; 23, entire lingual surface ground away, root truncated, edge chisel-shaped); 24-27, worked wolf incisors (24, root notched each side near apex; 25, split, one long edge ground; 26, split, apex notched on either side; 27, root incised on one side near apex); 28-30, worked bear teeth (28, canine, tip transversely ground; 29, canine, inner root surface ground and scraped away; 30, molar, root perforated); 31-33, worked dog teeth (31, canine, apex perforated; 32, canine, apex grooved; 33, incisor, apex notched); 34, perforated plastron section of box turtle rattle; 35, bone polisher (?), ovoid in section, ends obliquely polished; 36, section of deer metapodial, condylar surface intact at one end, opposite end smoothly rounded; 37, thick oval long bone section, blunt both ends, grooved near one extremity; 38, incomplete antler tine object, perforated at one end; 39, head of bear scapula, centrally perforated; 40, porcupine incisor inserted in end of bird humerus (cutting tool ?); 41, turkey tarsometatarsus, with spur core, both extremities cut off; 42, grouse humerus, proximal condyle partially cut away; 43, hook-shaped object cut from antler; 44, same, from turtle scapula; 45, small turtle femur, perforated near distal extremity for decorative element (?); 46, fox mandible, perforated near angle, ascending ramus missing; 47, flat deer antler pendant, 3 edges nicked, corner perforated, funnel-shaped design in intaglio on front; 48, curved pendant, from split antler tine, edges nicked, apex perforated, triangle elements in intaglio on front; 49, similar, upper portion defective, front banded with red paint; 50, worked deer scapula, perforated near one end, one surface covered with incised chevrons; 51, spike-shaped bone object, triangular in section, ornamented with rectilinear and zig-zag engraving; 52, narrow, curved, antler object, edges nicked.

from Frontenac Island (pages 283,287) While there is no necessary correlation in this regard, the upper level complex from Lamoka Lake is, on the whole, still an enigma.

Geneva Component (Plate 153, site 2)[1]

Originally this settlement covered some 2 acres of the high terrace bordering the east shore of Seneca Lake, 2 miles southeast of Geneva, Seneca County, and just south of the source of the Seneca River, outlet of the lake, but the main level portion and the entire cemetery (as determined by records) were destroyed by railroad construction about 1895, leaving approximately an acre of hillside dumps, about a third of which was explored in 1935 through the courtesy of the Geneva Yacht Club. It was found to consist of nearly homogeneous black earth, 1 to 2 feet thick, amply strewed with fire-broken stones and yielding occasional food animal and broken human bones, the latter suggestive of cannibalistic practices; 1,150 artifacts of stone, bone, and antler, all typologically indistinguishable from the Lamoka Lake series; 2 human skeletons, one definitely intrusive during the Point Peninsula period, the other probably also post-Archaic;and 7 intentional burials of small dogs (See trait table on pages 387-394).

Scottsville Component (Plate 153, site 3)[2]

Some 12 miles south of Rochester, on the summit of a high, steep-sided, flat-topped gravel kame, locally known as Woodchuck Hill, lying on the flood plain of the Genesee River, a mile southeast of Scottsville, Monroe County, is situated the third of the Lamoka village sites, which was excavated in the summers of 1935 and 36.

Beneath a thin refuse mantle, 50 fire pits, averaging 3 feet in diameter and 2 feet in depth, were troweled out, from which, and the hillside dump along the crest of the east slope, came 362 artifacts, all previously known to the focus except 11 spindle sockets (?) fashioned from deer astragali (Plate 159, figs. 30, 31). (For trait table see pages 387-394).

Near the south end of the hill remains of 5 individuals in an advanced state of disintegration came to light. One was the closely flexed skeleton of an adult male, a celt lying where the skull should have been; the others consisted of two double bundle burials, one containing a child, whose bones had been lightly sprinkled with hematite paint.

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[1]Ritchie, 1936a.

[2]Ibid.

Plate 161. Antler Pendants and Pendant-like Artifacts
Lamoka Lake Site
Lamoka Focus
Length of fig. 8 is 9 inches

1, split tine object, imperforate, end reworked (?) to chisel-shape, long edges nicked, decorated on both sides with bands of red paint; 2, pendant from split tine, apex perforated, long edges nicked; 3, 4, fragmentary split tine artifacts, long edges nicked, striped on one side with red paint; 5, imperforate split tine object, edges nicked full length, end bluntly truncated; 6, 9, split tine objects, imperforate, long edges nicked, end wedge-or chisel-shaped; 7, split tine artifact, imperforate, few nicks on long edges near base, ornamented with spiral bands of red paint, end rounded; 8, split tine object, imperforate, long edges nicked near base, end bluntly pointed; 10, split tine pendant, apex drilled, edges nicked, front embellished with triangles in intaglio.

Plate 162.

Antler Pendant-like Artifacts
Lamoka Focus
Length of fig. 10 is 4 1/2 inches

1-3, Geneva site; 4, 5, Scottsville site; 6-10, Lamoka Lake site.

1, painted central fragment; 2, basal fragment; 3, central fragment; 4, 5, segments with chisel-shaped ends; 6, painted and reworked (?) specimen, end chisel-shaped; 7, 8, reworked objects, ends blunted; 9, broken object, edge rough; 10, complete object, end chisel-shaped.

Craniometric Data

Unfortunately, exceedingly few burials of the Lamoka Focus have rewarded our otherwise productive excavations. At Lamoka Lake no cemetery could be found and only 5 flexed burials probably belonging to the primary occupation were exhumed from the village debris. The graves apparently pertaining to the Geneva site had been totally destroyed, and at Woodchuck Hill the flexed and bundled remains were too defective for metrical study. The 5 perfectly preserved skeletons from a large camp site in the Genesee Valley near Avon, Livingston County, mentioned in a previous publication,[1] cannot with certainty be attributed to the adjacent Lamoka camp site, hence will be disregarded, despite their close morphological affinity to the Lamoka remains. Thus there exist but 5 crania, 3 male, 2 female, all incomplete save AP49, an adult male, from Lamoka Lake.

Analysis of these extremely meager data affords a skull type which is long and narrow (dolichocephalic, mean cephalic index male 73.2, female 71.9), high-vaulted (hypsicephalic, height-length index AP49, 78.9), with a high narrow face (leptoprosopic, total facial index AP49, 99.2), a narrow nasal aperture (leptorrhine, nasal index AP49, 45.4), and high orbits (hypsiconch, orbital index AP49, 86.3).

This combination closely approximates the Basket Maker type of Hooton,[2] the Capsian type of Dixon,[3] and the Gooden type of the Sylvid race of Neumann.[4] Essentially non-Mongoloid, it seems to be related to a relatively early strain in the aboriginal population of both Americas.[5]

Salient Unsolved Problems of New York Archaeology

Fluted Points

Frequent references have been made in the foregoing account to the writer's limitations of knowledge, hence to those features of New York cultures on which future research may best be expended. In addition to such problems bearing on the further elucidation of partially defined occupations, there exist for the New York area, larger enigmas, with respect to which virtually everything remains to be discovered. The first of these relates to the Folsom problem which is of almost continental scope, the New York segment, being, in fact, relatively unimportant. Yet it is interesting to note that in central New York, where it is more numerous than elsewhere in the state, the now widely recognized fluted point was first described as a valid type, the so-called "Seneca River point", by Beauchamp, who, because of the occurrence of one in a double-walled

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[1] Ritchie, 1936a, pp. 18-20.

[2] Hooton, 1930, pp. 231, 232.

[3] Dixon, 1923, p. 21.

[4] By correspondence with Georg Neumann, August 11, 1941

[5] Hooton, 1930, pp. 356-358; 1933, pp. 160-162; Dixon, 1923, pp. 401-406; 454-458.

Plate 163. Fluted and Weathered Argillite Points

1, Fluted point of blue-black chert, head of Canandaigua Lake, east side, Yates Co.; 2, fluted point of dark green chert, near Baldwinsville on Seneca River, Onondaga Co.; 3, 4, argillite points, Alger farm, head of Honeoye Lake, west side, Ontario Co.; 5, deeply weathered argillite point, Pitcher farm, head of Waneta Lake, west side, Schuyler Co.; 6, argillite point, Schoharie Creek valley, Schoharie Co.; 7-10, argillite points, Genesee valley, near Mt. Morris, Livingston Co.; 11-23, argillite points, Jenkins farm, opposite Big Island, east side Chemung River, about 2 miles south of Elmira, Chemung Co.

4, 6, 11, 12, 15, 19, 22, 23, weathered purple; 10, weathered green; 21, weathered brown; others weathered gray.

precontact earthwork near Baldwinsville, Onondaga County, believed it to be an Iroquoian form.[1] While the true significance of the type was recognized in 1927,[2] the numerous subsequent investigations[3] have not made clear whether the sporadic occurrence of these points in the northeastern part of the continent arises as the result of infiltration from the Great Plains of the early hunters of mammals now extinct; or by other means, perhaps secondary derivation from older deposits in the west, and perchance south, by later migrants to the area.[4] Although likli-hood of the former hypothesis seems remote, the 14 fluted points[5] recorded by the writer from New York state were surface finds unassociated, insofar as could be determined, with other cultural objects (Plate 163, figs. 1, 2).

If central New York be excepted, perhaps more fluted points have been picked up in the Lake Champlain and Lake George valleys than elsewhere in the northeast. The museum of Fort Ticonderoga exhibits one of greenish chert and one of dark gray chert, both from the same farm near the foot of Lake George, on the west side, Essex County, New York; one of light gray chert from the grounds of the fort itself (Essex County); and 8 trianguloid points, whole or fragmentary, 4 of which present the characteristic fluting and lateral expansion of the Folsom blade.[6] These 8 points, together with 7 end and 2 side scrapers, very similar to examples unearthed by Roberts at the Lindenmeier site in Colorado, are stated to have been found in a sand blow on a high terrace along the north bank of the Lamoille River, High Gate Township, Franklin County, Vermont.

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[1]Beauchamp, 1897, p. 21, figs. 13, 14.

[2]Cook, 1927; Figgins, 1927.

[3]Roberts, 1935, 1936; Howard, 1935; Fishel, 1939; see bibliography on early men in America by Sellards, 1940.

[4]Roberts, 1940, p. 108.

[5]A bare list of these points (omitting those mentioned in the text), their locality and material, is as follows: near Portlandville, Otsego Co. (yellow jasper); near Bainbridge, Chenango Co. (gray chert); near the head of Canandaigua Lake, east side, Yates Co. (blue-black chert); 2 specimens found near the mouth of Owasco Lake outlet, on the Seneca River, Cayuga Co. (blue-black and light gray chert); near Baldwinsville, Onondaga Co. (dark green chert); township of Van Buren, Onondaga Co. (gray chert); near Phoenix, Oswego Co. (light gray chert); at Brewerton, Onondaga Co. (red jasper); near Clayton, Jefferson Co. (yellow jasper); and about 3 miles south of Jamestown, Chautauqua Co. (brown chert).

With the possible exception of the example found near Bainbridge, the material is exotic and seems to have been imported into the state from the west and perhaps the south, if the jasper quarries of eastern Pennsylvania be considered a potential source of supply.

[6]From the collection of Mr. William Ross, St. Albans, Vermont.

Weathered Argillite Points

Another variety of artifact formerly believed to have a considerable antiquity in the Middle Atlantic area is the deeply weathered argillite point, most common in New Jersey.[1] Along the Delaware, Susquehanna, and their tributary streams in New York, a considerable number of these implements have been picked up. They are especially numerous on certain small surface sites in the Cohocton Valley, a major branch of the Chemung through which the argillite bearers reached the western Finger Lakes, notably Honeoye, where on the Alger farm, near the head on the west side, at least 50 such points have from time to time been uncovered by the plow (Plate 163, figs. 3, 4).

Insofar as the writer can judge, these New York examples present, in the main, as advanced a degree of weathering as their New Jersey counterparts. The narrow type, known in New Jersey as "fish spears"[2] are relatively rare, most of the New York specimens being broad-bladed and lozenge-shaped or stemmed. Certain of the latter do not greatly differ in form from points of the same, but much less patinated material excavated from sites of the Brewerton Focus (compare Plates 163, figs. 3-23; 110, figs. 2, 63, 88, 89, 97). Whether this variation in degree of weathering depends upon factors of age, soil condition, or surface exposure as contrasted with burial, or other variables, is a moot question which may find solution in the extensive investigations conducted since 1936 on the famous Abbott site, near Trenton, by the Indian Site Survey of New Jersey, under the direction of Dr. Dorothy Cross.

Perch Lake Mounds

Of quite a different nature is the third and perhaps most baffling riddle of New York prehistory, the problem of the annular or so-called Perch Lake mounds, although they are by no means confined to the vicinity of this small body of water, situated about 10 miles north of Watertown, Jefferson County. Structures apparently similar in form, composition, and arrangement were described by Wallbridge in 1860 from the shores of the Bay of Quinté, Ontario.[3] Several opened by him conformed in general to the features found in New York, but one contained probably intrusive Point Peninsula burials (see page 178). He mentions others situated on the Trent River, which drains Rice Lake into the head of the Bay of Quinté.

On the Indian River, in Jefferson and St. Lawrence counties, New York, the writer has found such mounds, two much-eroded examples on the left bank about two miles downstream from Theresa, and a very impressive specimen, some 30 feet in diameter and 4 feet in height, at the old lead workings, on the right bank, opposite the end of the first rapid below Rapid School.

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[1] Abbott, 1883, 1888; Volk, 1894, 1911; Mercer, 1897, 1898; Spier, 1918.

[2] Spier, 1918, pp. 204-205.

[3] Wallbridge, 1860.

Plate 164. Excavation of Cuba Mound

Stripping sod over central area, partially recessed to show four fire levels. Cut face of black soil and heat-fractured stones.

About half a mile southwest of Phoenix, Oswego County, on the Fred Jensen farm, Mr. William H. Jennings of Fulton showed the writer a mound, approximately 40 feet in diameter, undoubtedly of this character. It lay in a grove on the high terrace between the Oswego and Oneida rivers, which meet a mile and a half to the south at Three Rivers Point. Apparently little disturbed, the ring and center were tested; the latter having been made the repository for skeletons of sheep and much other refuse, little could be learned about it, but the wall was typical in every way of the Perch Lake structures. In the adjacent plowed field existed plain evidence of a second ring of about the same size, completely leveled, but marked by the broad black zone of earth, littered with fire-broken stones, which characterizes the sites of these mounds No other occupational traces were observed, not even an arrowpoint, although the plowed field was carefully scanned.

Near Cuba, in far-removed Alleghany County, two such mounds were brought to the writer's attention by Mr. Harry L. Zook of Friendship, New York and through permission obtained by him, excavations were made by the museum in the spring of 1938.

The peculiar nature of this type of mound may best be appreciated from a description of the type examples at Perch Lake, in the immediate vicinity of which some 200 are believed to have originally existed. Beauchamp, who has given them the most study, easily counted 54 in 1901 on the thinly earth-covered terraces of Chazy limestone along the east shore and about the north end of the lake.[1] Others stood along Hyde Creek, the inlet stream, and on the east side of Perch River, the outlet, as well as on Linnell's Island, lying southwest of the foot, in the large swamp extending for a considerable distance about the south end and back from the west shore of the lake.

There is a marked tendency for these mounds, which range from about 30 to 50 feet across, 2 to 5 feet high, and contain a shallow to deep central depression 8 to 10 feet in diameter,[2] to occur in pairs, sometimes with intersecting perimeters, or in small clusters, on the more or less level highland or even lowland, and sometimes virtually on the rock outcrop.

Although no thorough and systematic excavation has, so far as known, ever been accorded a mound of this kind, a considerable number have been trenched and many more plowed down or shoveled away for fill. The descriptions of the early digging quoted by Beauchamp[3] are in general confirmed by the writer's experience from sections made at different times in 3 mounds at Perch Lake and 2 near Cuba, Alleghany County. Before proceeding to a condensed account of these it may be said, by way of a general picture, that in all recorded instances the body or "ring" of the mound has consisted of black, charcoal-bearing soil, heavily intermixed with angular fragments of fire-broken rock, a mixture which, save for the almost total absence of any vestige of animal or industrial remains, corresponds closely with the usual "refuse dirt" of Indian habitation sites. Within the depressed centrum the quantity and size of these "fire-stones" greatly increases, in fact, there is often little more present than small boulders in varying stages of disruption by intense heat, plus charcoal and ashes.

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[1] Beauchamp, 1905b.

[2] A few flat-topped mounds are mentioned in Beauchamp's report (1905b, p. 6) on Perch Lake, but the writer did not see any. The Cuba mound, described below, seems to be a comparable example.

[3] Beauchamp, 1905b, pp. 6-8, 18.

Wallbridge refers to a pair of mounds examined by him on the Bay of Quinté, which had slab-sided basins;[1] Beauchamp describes and figures a similar one from Perch Lake;[2] and the use of slabs to cover hearths was observed by the writer in the Cuba mounds.

With such great volumes of "made" material one would expect the normal concomitant of middens, namely food refuse and industrial objects, but with the minor exceptions to be noted, such were entirely wanting from the structures personally examined, and no verifiable instance,[3] save the probably intrusive burials uncovered in one by Wallbridge, can be cited. Thus the hypothesis that they were "hut rings" or the earthen bases of tipis, postulated by Beauchamp and others,[4] seems untenable. Except for their size and abundance about Perch Lake, the possibility of their having been sweat lodges seems more credible. Moreover, the only occupational traces occurring in the vicinity of such mounds, insofar as the writer could discover, comprise a thin midden of small extent on the south side of Perch Lake near the foot, in which Iroquois and Woodland potsherds were commingled with a few pipe fragments, points and scrapers, and a thin scattering of chert chips in the plowed field surrounding one of the Cuba rings.[5] That the debris in the former instance postdates the mounds is proved by the intrusive presence of a hearth yielding identical potsherds situated on top of a low mound close to the midden.

In company with Mr. Henry H. Hubbard of Theresa, the writer made his first trip to Perch Lake in 1928. Selecting what seemed to be a typical mound of some 30 feet in diameter, situated about midway on the south side of the lake, a trench 4 feet wide, 26 feet long, and 4 feet in maximum depth was put through from well without the perimeter to some 5 feet beyond the center into the opposite wall. Nothing save forest mould intermingled with weathered limestone fragments from the bedrock was encountered until the "ring" of black soil and fire-shattered limestone, sandstone, and crystalline rock fragments was reached. It was 10 feet wide, 28 to 36 inches thick, and enclosed a depression approximately 8 feet in diameter. Here the trench was widened to expose an irregular heap, about 9 feet in diameter, of much-burned boulders embedded in charcoal and ash. No clue whatever to the culture affinity of the makers came to light.

During the summer of 1933, two other mounds on the same side of the lake near the foot were partially explored with the kind assistance of Messrs. Curtice M. Aldridge of Montclair, New Jersey and John B. Nichols of Cape Vincent, New York. The first was a low eminence, 27 feet in diameter, having a shallow sunken center approximately 4 feet across in which the hearth, containing intermingled Iroquois and Woodland potsherds, previously referred to, occurred in the topsoil. A trench 4 feet wide was cut across the wall which had a maximum depth of 40 inches and was composed of black earth and broken stones. Below the intrusive hearth in the depressed center and under some 3 inches of black soil, fire-broken stones were

[1]Wallbridge, 1860, p. 112.

[2]Beauchamp, 1905b, pp. 13-14.

[3]Beauchamp cites the alleged recovery of a few potsherds, a celt, and arrowheads from some of the mounds destroyed (1905b, pp. 6, 8, 13, 15).

[4]Beauchamp, 1905b, pp. 7, 19 ff.

[5]A small number of points, some of chalcedony, are said to have been picked up in this field.

found in profusion, becoming larger in size and greater in quantity as the trench deepened, until in the lower half or 18 inches the composition was almost entirely burned stones, varying in size from small fragments to boulders more than a foot in diameter, of limestone, sandstone, and granitic rocks, but chiefly sandstone. These covered a roughly circular area of 5 feet and rested upon a mass of white ash and charcoal covering the heat-indurated clay subsoil scantily investing the rock.

A second more prominent mound nearby possessed essentially the same construction, except that fewer and smaller stones occurred within the central area. In both instances evidence of large fires and intense heat were clearly to be seen.

The most intensive work done on apparently comparable structures was undertaken by the Rochester Museum near Cuba, Alleghany County. A partial examination was made of the base of an "earth ring," identical in appearance with plowed-down mounds at Perch Lake and near Phoenix on the Oswego River, situated on the Cole farm, Haskell road, 1 1/2 miles south of Cuba. At the center of a band of black earth and fire-broken stones, 19 feet broad and some 50 feet in outside diameter, a definite circular area of fire-burned earth overlay a thin bed of charcoal which in turn rested upon a rough platform composed of 12 small sandstone slabs, 5 feet 6 inches across, rimmed with about one foot of burned sand, the whole fire-stained area thus having a diameter of some 7 feet. Careful troweling beneath the partially removed slabs revealed a pit 22 inches deep filled with black soil, charcoal, burned stone fragments, and slabs having no regular arrangement. A narrow trench across two opposite sides of the ring disclosed a V-shaped trench, 2 and 2 feet 10 inches deep, respectively, containing the usual black soil and stones found in the wall. In several small test pits sunk around the central area a thin film of black soil was found about a foot below the surface, suggesting an old floor level. In fact, this more than any earth ring known to the writer seemed to have the characteristics of a house site, yet not a scrap of bone or stone was found. In order that a thorough subsequent examination could be made the dug central portions were accurately restored.

Some 200 yards to the east, in the adjacent pasture lot on the Hosley farm, the seasonal overflow of a small creek had partially dissected a mound situated upon a low terrace. A section made across the eroded face to the approximate center, which was excavated, and a narrow trench parallel with the section from periphery to central area on either side of the remaining half, disclosed the essential aspects.[1] The length was 38 1/2 feet and the maximum height 3 feet 10 inches. Construction had been made upon a slightly sloping plane and no vestige of a sod line could be traced over the subsoil, a fine-textured, yellowish-brown, clay alluvium. At one place on the floor under the inner edge of the ring the subsoil was burned red for a space of 2 feet. The heap itself consisted of a roughly circular central core, 16 feet in diameter, surrounded by a broad mass of black soil with a heavy intermixture of charcoal granules and fragments up to an inch long, and angular fire-broken rocks, mainly of sandstone

[1]The work was systematically done, all parts being mapped with the aid of the transit and every step photographed. It is planned to issue a report on this structure, the Cole mound base, and the mounds at Perch Lake following a more thorough study of the two latter.

2 or 3 inches across. The mixture was rendered heterogeneous by the random occurrence of streaks and masses of much darker material, evidently hearth dumpings. The central area consisted of 7 superimposed saucer-shaped hearths, from approximately 9 to 12 feet in diameter, each distinguished by a crescentic band of charcoal over a similar zone of reddened soil, 2 to 4 inches in depth measured together, alternating with thinner layers of silty soil similar to the subsoil (Plate 164). Although in some instances these latter were traceable part way over the surrounding black soil, conclusive proof of their natural deposition by flood waters was lacking. It appeared more probable in view of the occasional darker streaking, charcoal fragments, and sporadic broken stones that the soil had been intentionally scattered over each fireplace. Partially covering both the basal and the uppermost hearths were platforms of slabs and flat boulders, displaying by discoloration and exfoliation marked thermal influence. Over the superior stone platform the light-colored alluvial soil occurred for 20 inches pinching out rapidly over the shoulder of black dirt. Sheathing the entire mound was a humus layer some 1 1/2 inches thick on the summit and 3 1/2 on the sides.

Observed details enable the following tentative reconstruction of this mound. First the humus zone was removed, after which the floor was sanded to a depth of 2 1/2 inches. A large fire was then kindled, creating a broad one-inch band of charcoal. Through this the first fire basin, 6 feet 8 inches in diameter and 8 inches deep, was dug, the earth being heaped around and over the fringes of the horizontal charcoal band. Fires within this basin deeply reddened its sides and bottom, leaving thereupon a charcoal lining. Presumably the hearth was many times employed and a great number of stones heated within it, the cleared out contents being thrown around to gradually raise the ring of black earth and stones. After an indefinite period this hearth was covered by soil like that found in the mound neighborhood and a new fireplace formed atop it. Several times the process was repeated and finally the last hearth, which was left brimful of broken stones, charcoal and ashes, was slab, then earth covered. Omitting the latter features would have produced an annular mound like those at Perch Lake.

Within the two lowest hearths several small calcined bone fragments came to light, one definitely identified as a portion of deer phalangeal bone. These and a half dozen chert chips found in the light-colored soil of the core constituted the only utilitarian contents, and the impression that some unfathomable ceremonialism lay behind the construction of this and the Perch Lake structures bore heavily upon the writer.

Apart from these major mysteries of New York archaeology, there exist numerous problems several times generally or specifically referred to, which for emphasis we restate. Iroquois - Owasco relationships require further investigation; the development of the Canandaigua Focus, with particular reference to Point Peninsula connections constitutes an important problem; the interrelationship of Middlesex, Point Peninsula, and Hopewellian urgently needs clarification; Orient and Frontenac are still "floating foci"; and finally the suggested focal subdivisions of the Laurentian must be examined in the light of still undiscovered evidence. Therefore much remains for the critical scrutiny of the future and the demand for new sites is great indeed. Unhappily, as all familiar with New York prehistory are aware, a very considerable number, comprising in many instances stations of utmost importance, have been devastated by vandalism and commercial enterprise. Hence an appeal is made to amateurs and all other interested persons for unselfish cooperation in utilizing, for the furtherance of knowledge, such remains as will surely come to light from time to time.

Comparisons and Conclusions

In the foregoing description of the pre-Iroquoian occupations of New York state, the writer has attempted to present the data in unequivocal fashion, with a minimum of speculation. It is not proposed now to abandon this principle, although obviously hypothesis must have a larger role where general conclusions are to be drawn. The evidence adduced for culture distribution, sequence, and content seems ample to support the conclusions, although it would be presumptuous to assume that any point is not amenable to alteration through further investigations. The factor of error is amplified as broader comparisons are instituted and particularly as the temporal element is introduced, inasmuch as the reckoning of actual dates, suggested on Plate 4, rests solely on assumption. Neither dendrochronology nor pollen analysis have yet been applied to the solution of archaeological problems in New York.

Through the medium of a graph (Plate 165, A-H), summarized in the table on pages 329-340, which utilizes in a somewhat condensed manner, as compared with the trait tables (pages 341-394), the total cultural data, it has been possible to show the cultural distribution and frequency of traits; to demonstrate the diagnostic elements, or those restricted to or predominant in each culture entity, and to indicate the common denominators or linked traits variously shared, and thus to reveal the amount of apparent relationship among them.[1] On this basis has been formulated the three-fold subdivision of prehistoric time, referred to as the archaic, intermediate, and late prehistoric periods (Plates 2, 4, 165). These are envisioned as broad cultural horizons only, no one of them homogeneous, but each embracing, in the main, fundamentally allied cultures, the measure of whose correspondence and dissimilarity are indicated in the graph (Plate 165) and concisely interpreted in the tables on pages 329-340. It is hardly necessary to add that a too rigid construction put upon this tripartite differentiation raises the hazard of creating "historical or psychological actualities out of merely conceptual abstractions."[2]

Certain general observations can be drawn from this graphic study, however, if there be kept also in mind the essentially fragmentary nature of the data, especially with regard to the "middle cultures," and particularly the Middlesex Focus, which presents a hiatus doubtless more apparent than real. First, it may with confidence be stated that, while proportions differ considerably in the sundry complexes, a thread of progression is, for the most part, traceable throughout. Despite this, a concatenation of cultures on three successive, but probably overlapping time levels, can be discerned, each unified by the presence or absence of certain more or less specific features. Analysis of the archaic level as a whole shows (a) a large variety and numerical abundance of chipped stone types; (b) the lack of all the so-called "problematical" group of polished stone artifacts, except the bannerstone of several simple forms; (c) a considerable typological range in and large number of bone tools; (d) the prevalence of copper tools and the total lack of copper ornaments; (e) the general absence of shell

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[1]Only cultures intensively studied and for which adequate data exist are included. Thus the Coastal Aspect, Orient Focus, and Vosburg Focus are perforce omitted, the last by reason of its being almost entirely a surface manifestation.

[2]Sapir, 1916, p. 38.

artifacts; (f) the complete dearth of pipes; (g) the want of pottery, except in perhaps the closing phase; (h) the nonexistence of agricultural traces; and (i) the large variety of burial practices, generally not involving mortuary offerings.

The intermediate group of cultures, again taken en masse, reveals (a) a more limited inventory and smaller relative utilization of chipped stone artifacts;[1] (b) virtually the sole occurrence of the "problematical" forms, except the bannerstone, which is confined to the archaic level; (c) a relatively restricted range of bone types; (d) fewer copper tool types (flat celt and awl only), and the initial appearance of copper ornaments; (e) the extensive use of shell beads; (f) the initial occurrence of pipes of clay and stone, of both tubular and wide-angle elbow forms; (g) the moderate development of Woodland pottery; (h) the first traces of agriculture; and (i) a wide range of mortuary features, including the prevalence of grave goods.

The late prehistoric level presents a decided change of complexion, which is particularly marked in the Castle Creek Focus. Taken as an entity, there is displayed (a) the extinction or near extinction of the larger number of chipped stone types, most of which had been declining since archaic times, and the great emphasis on a single projectile type, the triangle; (b) the virtual disappearance of "problematical" forms (only the simple pendant and possibly the gorget survive); (c) a large dependence on bone artifacts; (d) the loss of copper articles; (e) the loss of shell objects; (f) the extensive use and development of the elbow form of pipe in clay and stone; (g) a very great use and extensive development of Woodland pottery, which attained its heyday in this period; (h) a major dependence on agriculture; and (i) a sharp curtailment of burial modes and grave offerings.

Do these and other observable differences denote a process of progressive alteration through internal means, augmented by diffused influences from various sources, i.e., do the graphs reflect an essential continuity with change operating on a more or less marginally isolated population? Or do these data rather suggest episodal or partially overlapping collateral developments with linkages of varying intensity and source, as depicted in the chart, Plate 4? The latter hypothesis, while not denying an appreciable amount of persistence from one level to the next, recognizes the probability of infusions of new complexes, probably in many cases associated with population movements which have acted to alter decidedly the tones and values of the cultural picture. It is this alternative, postulated in full realization of the random nature of the analyzed samples, which seems to the writer to be best sustained by the evidence at hand.

It may be well to characterize broadly the three defined horizons before presenting the more detailed summary which follows. The archaic, from its abundance of widely scattered remains of marked typological uniformity, apparently spanned a long period of relative isolation, with the major emphasis on economic survival. This seems particularly true for the earlier part of the period. In contrast, the intermediate period seems to have been both relatively and absolutely short; a time of flux due to numerous and diversified cultural influences. A stress on mortuary ceremonialism is reflected throughout. The late prehistoric

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[1] While it may be objected that fewer habitation components have been drawn on for such data from the intermediate period, this statement is valid for the prolific Vinette village site.

level appears to lack both of these features, revealing rather a steady progressive late Woodland development with accelerating Mississippian influences, appearing first about the middle of the period and attaining a climax in Iroquois culture. New York state's prehistory, as at present comprehended, can thus be said to constitute a conformable segment of the archaeological past of the eastern United States, with which comparisons in some detail may now be made.

The long-postulated archaic level in New York,[1] recently confirmed by intensive work in the southeast,[2] consists of an aggregate of discrete foci, sharing a hunting-fishing-gathering economy. Its chief characteristics are the absence of horticultural traces, ceramics,[3] and the smoking pipe. Small projectile points, abundant in the Lamoka Focus, suggest use of the bow from the earliest times, although the prevailingly heavier points of the Laurentian Aspect, coupled with simple forms of the bannerstone, thought to be atlatl weights,[4] also probably give the dart or javelin a significant place in the archaic congeries. Throughout the period the dog was an important adjunct of the hunter, for his carefully interred bones came to light on several stations.[5]

The use of copper objects is a negative trait of the Lamoka Focus, which, too, has produced but little shell work, but heavy copper tools, similar to the old deeply corroded types found so frequently in the Wisconsin region, and still unattributed, occur in the Brewerton Focus, thus far their only known provenience for New York. Burial in midden refuse with few or no grave furnishings (except for the Frontenac Focus) prevailed in the archaic period, during which time small emphasis seems to have been attached to mortuary matters. The few skeletons derived from the Lamoka Focus were flexed or rarely bundled, but the much larger number from the succeeding Frontenac and Brewerton foci add extension and cremation to the foregoing modes of inhumation.

The industrial aspect of the archaic cultures is also diversified. A rich bone and meager stone[6] inventory characterizes the Lamoka complex, while the probably partially contemporaneous Laurentian paradigm is exuberant in chipped stone, also in the main boldly flaked (by percussion?) In all probability the Laurentian Aspect is responsible for the bulk of the multifarious points, drills, and scrapers found throughout its wide range in the New York area. Certain types of the bannerstone, the gouge, plummet, and ground slate point and ulo, make their appearance in this aspect, together with copper tools, as already noted.

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[1] Ritchie, 1936a.

[2] Ford and Willey, 1941, pp. 332-334.

[3] Pottery was sparingly present in the upper level of certain sites of the Brewerton Focus (Ritchie, 1940, pp. 47, 48; 85, 86; 92) and occurred throughout the thin occupied zone of the Vergennes, Vt. station, only known component of the Vergennes Focus (Bailey, 1939, pp. 20-23), both of the Laurentian Aspect.

[4] Webb and Haag, 1939, p. 50 ff.

[5] To the small breed contributed by the Lamoka and Brewerton foci, a much larger kind is added by the Frontenac Focus.

[6] The beveled adze, most diagnostic marker for the Lamoka Focus, is the sole exception to the prevailingly rude stone industry. It is usually symmetrical and highly polished.

In the Frontenac Focus, the contact product of the Lamoka and Brewerton cultures, the chief features of both constituents are reproduced and the shell component, weak in the former and wanting from the latter, has an unexpected development.

A sharp cleavage in physical type distinguishes the Lamoka and Brewerton foci, the former being the product of a long-headed, long-faced, and narrow-nosed people, the latter being associated with folk broader in all these features, while in the composit Frontenac, as might be anticipated, both somatic strains exist.

As has been pointed out,[1] the archaic in New York seems to be a regional expression of an early level embracing also the Shell Mound culture of Kentucky,[2] southeastern Indiana,[3] northern Alabama,[4] and Tennessee;[5] probably the lower occupation at Stalling's Island, Georgia;[6] and according to Ford and Willey,[7] the Tennessee "Round Grave" culture of Harrington,[8] and the recently found Tchefuncte complex in southern Louisiana.[9] The writer, however, inclines to attribute the last two manifestations to a later level. The numerous differences as well as resemblances which are to be noted among these relatively primitive and widely scattered hunting cultures express the "qualitative differentiation, followed by interchange in all directions"[10] theoretically predictable. On the whole, of those enumerated, the Shell Mound culture exhibits the closest parallels with the New York archaic; with the Lamoka Focus in its bone industry, with the Brewerton and Frontenac foci in respect to stone work.[11]

With the first it shares, as important traits, the narrow stemmed point; expanded base drill; cylindrical pestle; mortar; fishhook; perforated and notched base splinter awls; awls from the perforated splanchnic bone of the raccoon, deer ulna and turkey radius; notched section of deer antler; conical antler point (rare in Lamoka); dog; flexed burial in the refuse; and occasional use of red ochre. The painting and engraving of bone implements at Stalling's Island also have their counterparts in the Lamoka Focus. Distinguishing differences comprise the grooved axe, bell pestle, broad-bladed stemmed and notched points, scraper, bannerstone, antler flaking tool, carved bone pin, and shell bead--all negative Lamoka traits. This list of

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[1]Ritchie, 1940, p. 97; Ford and Willey, 1941, pp. 332-334; Haag, 1942, p. 220.

[2]Moore, 1916, pp. 431-487; Webb and Haag, 1939; 1940.

[3]Guernsey, unpublished Ms. "Archaeological Survey of Clark, Floyd, and Harrison Counties," summary in Lilly, 1937, pp. 100-101; Miller, 1941.

[4]Webb, 1939, pp. 21-23; 34-43; 80-83; Webb and DeJarnette, 1942, pp. 41-43, 58-79, 81-91, 93-132, 132-142, 142-146, 178-208, 208-212, 235-266, 266-268, 306-319, 403-428.

[5]Webb, 1938, pp. 25-32; 126-128; 128-130.

[6]Claflin, 1931; Fairbanks, 1942, pp. 223-231.

[7]Ford and Willey, 1941, p. 339.

[8]Harrington, 1922, pp. 63-82; 147-167.

[9]From comparative trait table submitted by George I. Quimby, Jr., 1940.

[10]Lowie, 1940, p. 414.

[11]Webb and Haag, 1940.

dissimilarities is reduced by the following elements when the Brewerton and Frontenac foci are included; conical (bell-like) pestle, broad-bladed stemmed and notched points, scraper, bannerstone, and antler flaking tool.

The chronological phase of the problem of the archaic occupation of the eastern United States, as physiographically defined by Ford and Willey ("All the vast region south of the Maritime Provinces and the southern portion of Canada near the Great Lakes and east of the Plains from the Dakotas to central Texas"[1]) presents the greatest difficulty. In all liklihood the area was thinly populated except in certain favorable, widely isolated localities, at a relatively early date. The stream of population doubtless flowed southward from the Canadian forests, its ultimate source being one or more Asiatic invasions with subsequent regional specializations arising partly from ecological causes, hence the earliest sites should theoretically be found in the north, not in the south, as Ford and Willey have recently postulated. Thus the writer cannot subscribe to their order of dating, viz., ca. 750 A.D. for the Tchefuncte sites of southern Louisiana (which, as above stated, seem to him to post-date the archaic and equate with his early intermediate period), ca. 850 for Shell Mound culture stations near the mouth of the Ohio, ca. 1050 for the Lamoka Focus of western New York, and ca. 1100 for still undisclosed traces of this level in the upper Great Lakes,[2] but would tend to reverse this order,[3] offering in support of his contention the progressive complexity of the congeries, when compared with Lamoka, encountered as one proceeds southward. For example, grooved axes, gorgets, several types of the bannerstone, bar amulets, shell beads, and even simple pottery occur in the lower layer at Stalling's Island; rude pottery also is present in middens of the "Round Grave" culture of Tennessee and in certain of the Shell Mound stations;[4] while at Tchefuncte, Louisiana, boatstones, bar amulets, plummets, conch shell pendants and containers, tubular clay pipes, and several pottery styles have been found.[5]

Solely on a rational basis, the first influx of Lamoka people from western Ontario into New York may tentatively be set several centuries earlier than Ford and Willey's lowest dating, approximately in the first half of the first millenium A.D., with the introduction of the Laurentians from the northeast several centuries later (see Plate 4). It is, of course, recognized that this "guess date" can be no better substantiated by factual evidence than the later figure.

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[1]Ford and Willey, 1941, p. 326.

[2]The Black Sand Focus of Illinois (Cole and Deuel, 1937, pp. 13-14) and particularly the nonceramic Level I of Signal Butte, Nebraska (Strong, 1935, pp. 269-270) may represent this horizon. Noteworthy resemblances with the Brewerton Focus occur in the latter in chipped stone types (compare Plate 25, 1 of Strong with Plates XIII, XV of Ritchie, 1940).

[3]Ford and Willey, 1941, figs. 2-6.

[4]Webb, 1939, pp. 42, 80-83.

[5]Griffin's classification of the Round Grave and Tchefuncte cultures with the early Adena cultures seems more consistent with the data (Notebook, Society for American Archaeology, Vol. 2, No. 2, 1941, p. 33).

The intermediate period, embracing the Middlesex, Hopewellian, and Point Peninsula cultures, is perhaps more heterogeneous than the foregoing archaic, and unlike it, rests upon a ceramic and horticultural base, implying a more sedentary mode of life, supplemented by fishing and hunting, with the aid of the dog. In large part these cultures have been described from their mortuary complex which, however, probably provides a fairly adequate concept, inasmuch as each placed heavy emphasis upon burial furnishings which are often varied and abundant with the flexed, bundled, extended or cremated remains. The Hopewellian made use, also, of small dome-shaped mounds, sometimes with prepared floor, stone-reinforced shoulder, and slab cist tomb, as repositories for the dead.

In material culture, polished stone played the dominant role, but there was a notable industry in bone, shell, and copper throughout the period. Our very limited knowledge of the ceramics permits only the statement that rude grit-tempered, conoidal-based, nearly straight-sided vessels, with fabric-or cord-malleated surface, are present in the Hopewellian and probably also in the Middlesex. Such pottery seems to have comprised the bulk of utilitarian Hopewellian ceramics throughout the range of this culture and it may also be present in the Red Ochre Phase of Illinois, presumably an Adena variant.[1] It is important to observe that neither the plain limestone-tempered ware associated with the Adena Phase nor the flat-based, often lobate vessels with negative bird design and other distinctive markings, which constitute the Hopewellian mortuary form, have been reported from New York. Point Peninsula potsherds, especially those of the probably earlier stage (Vinette component), possess characteristically rocker-stamped dentate embellishment on a good grade of grit-tempered ware, but while rocker-stamping of this kind is also a notable Hopewellian trait, it seems to be of early pan-Woodland provenience.

Characteristic of the intermediate horizon are tubular pipes of stone and clay (cigar-shaped in the Point Peninsula, of blocked-end type in the Middlesex); both straight- and curved-base platform pipes (absent from Middlesex); a plentitude of pendant and gorget forms; the birdstone; boatstone (Middlesex only); bar amulet; flake knife; flat axe, awl, beads, and bicymbal ear spool of copper (the latter Hopewellian only); large antler comb; hafted beaver incisor tool; the lavish use of shell beads of many varieties; and abundant powdered hematite with burials.

Beyond doubt the intermediate period in New York represents successive diffusions over several centuries from the Great Lakes area, mainly Ohio, via the Alleghany Valley and south shore of Lake Erie, probably both indirectly through the transmission of ideas and directly through the infiltration of actual carriers. In the latter case absorption of preexisting human and cultural elements and some local elaboration, incidental to the process of recrudescence, evidently took place, as judged from the varied somatic strains, in which a mesocephalic cranial form prevails, and the amalgamation of Hopewellian and Woodland traits uncovered in the Geneseo mound.

The writer concurs with Ford and Willey in relating these processes to a general expansive movement within the population of the eastern United States, in their postulated Burial

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[1] Cole and Deuel, 1937, pp. 69, 48-49 (Type 6 ware).

Mound I Stage.[1] Thus the Middlesex may probably be regarded as a prolongation of basic Adena, like the Red Ochre Phase of westcentral Illinois,[2] the Gravel Kame culture of northern Ohio[3] and southern Michigan,[4] and the stone mound culture found along the Ohio River.[5] It must be noted, however, that among these manifestations the Middlesex and Gravel Kame cultures alone produced no known mounds.[6]

Ford and Willey are also doubtless correct in advancing an earlier date (ca. 850 A.D.) for the Ohio Valley equivalent of the Middlesex, for which their chronology (ca. 1100 A.D.) closely coincides with the estimated date, ca. 1000 A.D., independently arrived at by the writer (Plate 4).

According to these authors, the nascent Adena complex spread northward along the Mississippi, certain of its roots (the tubular pipe, boatstone, plummet, conch shell gorget and container, pierced canine teeth, stemmed projectile points, use of ochre with burials) having been supplied by the alleged archaic Tchefuncte culture of Louisiana.[7] Future researches may prove, however, that the basic Adena-Hopewellian complex stemmed rather from an older Woodland base, vitalized by southern ceramic, agricultural, pipe-using, mound-building, and other inspirations, as suggested by evidence from Illinois,[8] with a heritage of northern archaic traits, as witness, for example, the extended and cremated burials, sometimes with red ochre, broad stemmed and notched points, plummets, shell gorgets, drilled animal teeth, and ground wolf mandibles, of the Brewerton and Frontenac foci.

However the case may prove, there seems little doubt that Adena variants diffused over a wide territory drained by the rivers and their tributaries which discharge into the middle reaches of the Mississippi.[9]

Presumably a later phase of the same development, stressing funerary observances even more heavily, became the broadly distributed Hopewellian culture,[10] pertaining to the Burial Mound II Stage of Ford and Willey, who again derive it fundamentally from the fecund

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[1]Ford and Willey, 1941, pp. 334-338.

[2]Cole and Deuel, 1937, pp. 58-69, 89-90.

[3]Greenman, Emerson F. Article entitled "Department of Archaeology," in "Museum Echoes," Vol. 4, No. 8, Aug. 1931, p. 55, Ohio State Archaeological and Historical Society, Columbus, Ohio.

[4]Personal communication from Mr. Wilbur M. Cunningham, Benton Harbor, Michigan, May 24, 1939.

[5]Black, 1934, pp. 231-243; Lilly, 1937, pp. 60-63.

[6]Ford and Willey also classify the Copena culture of northern Alabama in the Adena Phase (1941, p. 337), while Webb probably more accurately regards it as a Hopewellian manifestation (Webb, 1939, p. 201; Webb and Funkhauser, 1940, p. 264).

[7]Ford and Willey, 1941, p. 335.

[8]Cole and Deuel, 1937, pp. 202-203.

[9]Setzler, 1940, p. 267.

[10]Ibid., p 259.

Tchefuncte complex through the intermediacy of the Marksville, with a possible reflex of stimulation from the now advanced Adena to the north and a still obscure "hypothetical outside source, which furnished the previous (Burial Mound Stage I) crystallizing elements of burial mounds, a crude pottery, and rudimentary agriculture to Tchefuncte."[1] While not in complete accord with this conjectured genesis, as already indicated, the writer closely concurs with Ford and Willey in the matter of chronology, his estimated date of 1100 A.D. for the arrival of Hopewellian groups in New York (Plate 4) being only about a century earlier than theirs.[2]

The paucity of the remains of the intermediate period testify to the relative brevity of this most brilliant cultural epoch in ancient New York, an interlude of efflorescence between two manifestations comparatively monotonous and predictable to the experienced archaeologist. It was succeeded, perhaps some 700 years ago (see Plate 4) by the late prehistoric period evidently of gradual development, as shown by the progressive refinement of its earlier component, the Owasco Aspect, certain of whose roots seem embedded in the soil of the previous period. Yet the transition is sufficiently abrupt to demonstrate, with the aid of an apparently new dolichocephalic physical type, that the Owasco was no mere survivor from the Point Peninsula, but represented the influx of new Woodland elements, both cultural and physical, from what quarter it is still impossible to say. Generic resemblances in the fictile products particularly may be perceived with numerous late Woodland entities in the Great Lakes area, notably the Monongahela Aspect,[3] the Younge Focus,[4] and the Lake Michigan Phase.[5] The same is true if one examines the products of certain sites in the Potomac River region[6] which yield the Potomac Creek ware of Holmes,[7] and the tradition lingered until historic times on the Atlantic face of northeastern United States from the Chesapeake at least to Massachusetts.

Along with the obtuse angle elbow pipe (many examples almost tubular in the preceding period), which evolved from a prevailingly rude plain state in the early Canandaigua Focus to the elaborate embellishment of a form with bowl and stem almost at right angles in late Castle Creek times, one finds a grit-tempered, elongate-bodied pot type, at first pointed-based and nearly straight-sided, which clearly has a parallel development with the pipes into a semi-globular, round-bottomed, constricted-necked, and collared vessel having Iroquoian affinities. Dentate-stamped ornamentation, the ear-mark of the Owasco potter, however, persisted throughout the whole range, advancing in perfection of execution and elaboration of design to the Castle Creek climax.

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[1]Ford and Willey, 1941, p. 338.

[2]Ibid., fig. 4.

[3]Butler, 1939.

[4]Greenman, 1937.

[5]McKern, 1931, pp. 383-384.

[6]The Shepherd site, Montgomery Co., Md. (material in U. S. National Museum); Moyaone site, near mouth of Piscatoway Creek, Prince Georges Co., Md., seen by courtesy of Mrs. L. L. Ferguson, Washington.

[7]Holmes, 1903, pp. 155-157

[8]Willoughby, 1924, pp. 8-12.

In the stone techniques the Owasco departed materially from the high estate of the intermediate constellation of cultures with respect to polished articles, only a few pendants (and perhaps gorgets) being reminiscent of this formerly broad category. Cutting tools (celts and adzes), also infrequent, display several novel types akin to those of the Iroquois. Chipped stone work, however, suffered no decline, except in variety, and the triangular form of projectile point superceded all other kinds. The bone industry continued to flourish, with some significant deletions, but there was a notable decrease in the size of virtually every variety of artifact. This relative frailness and delicacy foreshadows the bone tools of the Iroquois. Copper and shell articles, previously abundant, practically disappear from the Owasco congeries, affording still another Iroquois parallel.

But even this is not the final similarity, for like their successors, and in striking contrast to their predecessors, the Owasco folk manifested little preoccupation with the dead. Simple flexed inhumation without grave goods, in cemeteries or refuse pits, was the rule. Moreover, towns were sometimes palisaded, were often situated on elevations remote from large waterways, and had as a feature, especially in later times, deep U-shaped cache pits, whose carbonized contents (corn and beans afford concrete assurance of an agricultural economy. Dogs, now of the small breed only, remained in use, sometimes for food, as among certain historic eastern Algonquian and Iroquois tribes, according to some evidence unearthed. A departure from the traits of the latter people is to be seen in the small, round, Owasco house sites, indicative of a wigwam variety of structure.

Finally, in their slighter bodily proportions and dolichocephaly, as contrasted with the robust mesocephalic Middlesex and Point Peninsula folk, the Owasco people tally morphologically with the later eastern Algonquians,[1] some of whom may be their descendants, as well as with the Iroquois who replaced or absorbed them in New York state, in the "last scene of all, that ends this strange eventful history."

---

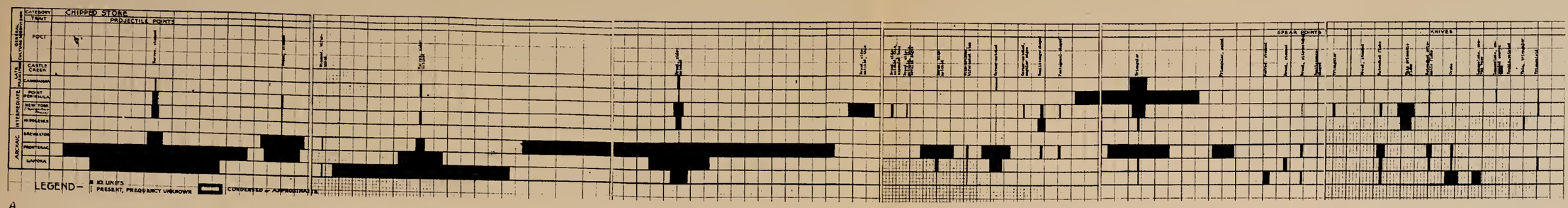
[1]Hrdlička, 1916, pp. 50-52; 110-130.

Plate 165. Graphs Showing Distribution and Frequency of Traits
for
Archaic, Intermediate, and Late Prehistoric Periods

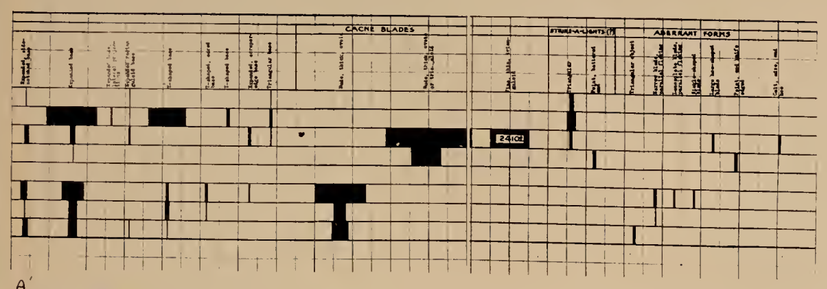
A, A^1	Chipped stone artifacts
B	Rough stone artifacts
C	Polished stone artifacts
D, D^1	Bone and Antler artifacts
E	Copper, Shell, Pigments, Mica, Quartz, and Textiles
F	Ceramics (Pottery and Pipes)
G	Burial traits
H	Miscellaneous traits

Plate 165. Graphs Showing Distribution and Frequency of Traits
for
Archaic, Intermediate, and Late Prehistoric Periods

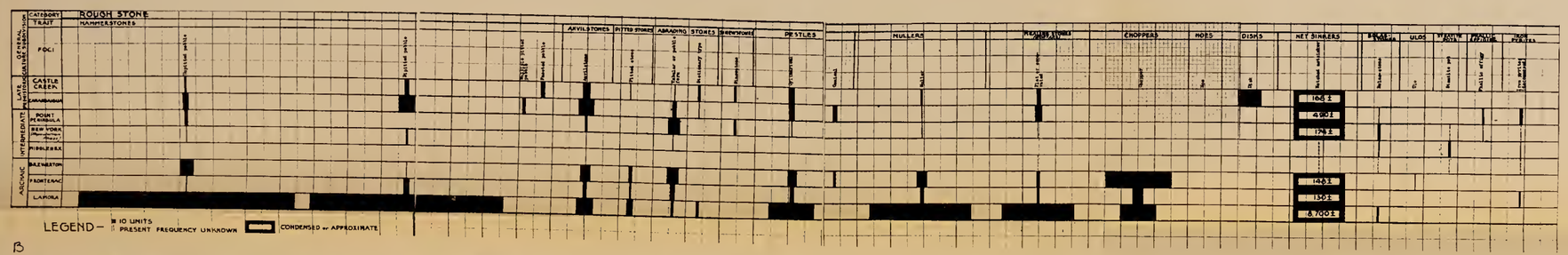
A, A^1	Chipped stone artifacts
B	Rough stone artifacts
C	Polished stone artifacts
D, D^1	Bone and Antler artifacts
E	Copper, Shell, Pigments, Mica, Quartz, and Textiles
F	Ceramics (Pottery and Pipes)
G	Burial traits
H	Miscellaneous traits


CHIPPED STONE
PROJECTILE POINTS
SPEAR POINTS
KNIVES
LEGEND – 10 UNITS
PRESENT, FREQUENCY UNKNOWN
CONDENSED or APPROXIMATE

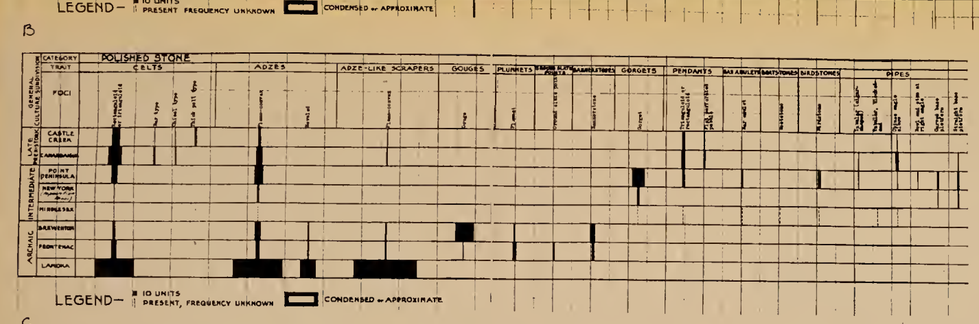
A


CACHE BLADES
ABERRANT FORMS
241 (?)

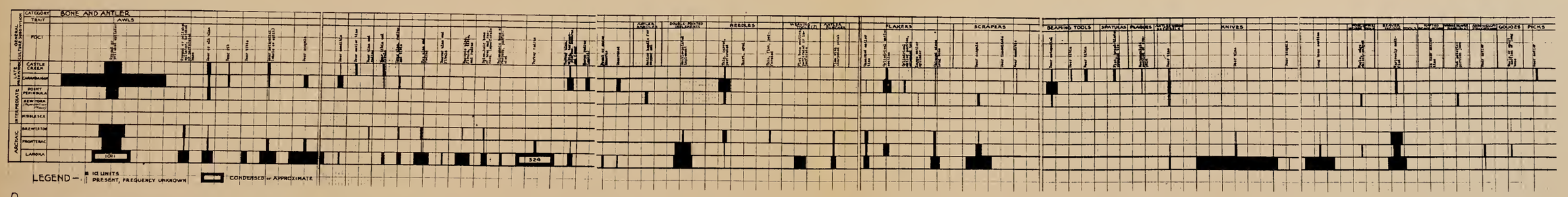
A'


ROUGH STONE
HAMMERSTONES
ANVILSTONES
PITTED STONES
ABRADING STONES
SHERDSTONES
PESTLES
MULLERS
CHOPPERS
MOLS
DISHS
NET SINKERS
PITTED PEBBLES
ADZES
PERFORATED ADZES
PLUMMETS
PERFORATED PLUMMETS
GORGETS
PENDANTS
BAR AMULETS
DISCS
WHETSTONES
PERFORATED WHETSTONES
PIPES
LEGEND – 10 UNITS
PRESENT FREQUENCY UNKNOWN
CONDENSED or APPROXIMATE

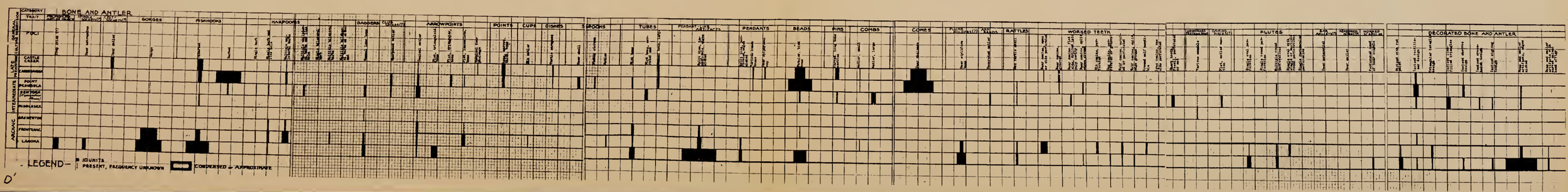
B


POLISHED STONE
CELTS
ADZES
ADZE-LIKE SCRAPERS
GOUGES
PLUMMETS
GORGETS
PENDANTS
BAR AMULETS
DISCS
WHETSTONES
PIPES
LEGEND – 10 UNITS
PRESENT, FREQUENCY UNKNOWN
CONDENSED or APPROXIMATE

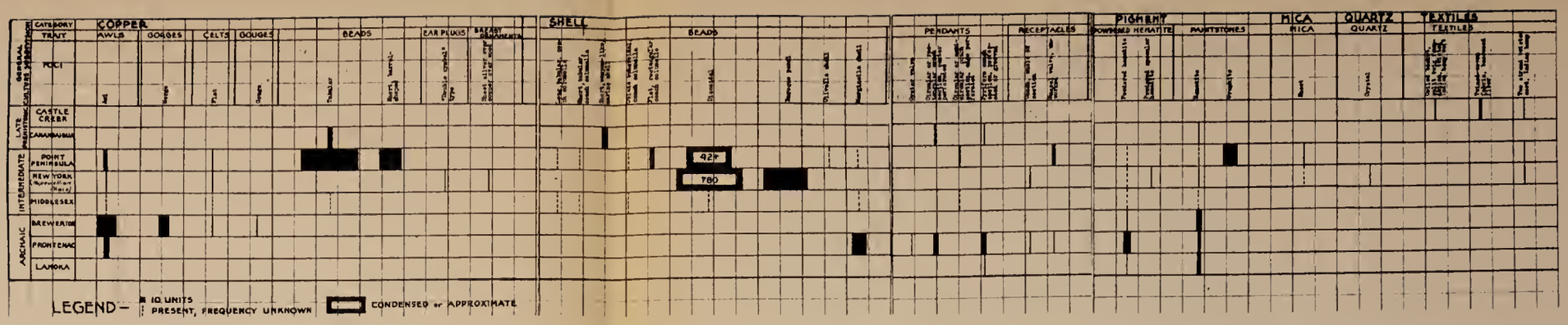
C


BONE AND ANTLER
AWLS
AWLS OR PUNCHES
BEVELLED PUNCHES
NEEDLES
SCRAPERS
FLAKERS
BEAMING TOOLS
SPATULAS
PLANERS
KNIVES
SMOOTHERS
GOUGES
PICKS
101
524
LEGEND – 10 UNITS
PRESENT, FREQUENCY UNKNOWN
CONDENSED or APPROXIMATE

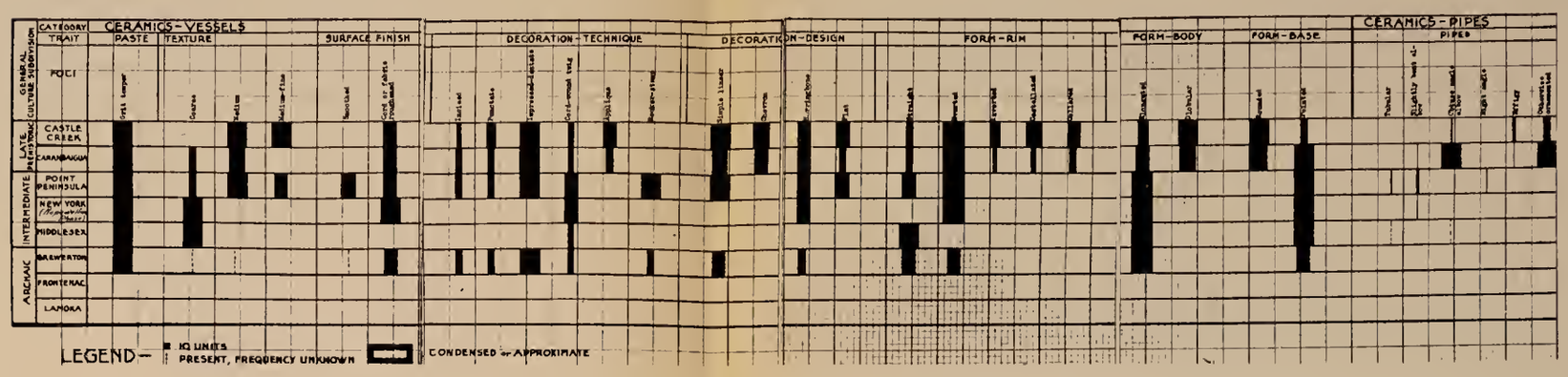
D


BONE AND ANTLER
GORGES
FISHHOOKS
HARPOONS
DAGGERS
ARROWPOINTS
POINTS
CUPS
DISHES
BROOCHES
TUBES
PENDANTS
BEADS
PINS
COMBS
CONES
BONE RATTLES
WORKED TEETH
FLUTES
DECORATED BONE AND ANTLER
LEGEND – 10 UNITS
PRESENT, FREQUENCY UNKNOWN
CONDENSED or APPROXIMATE

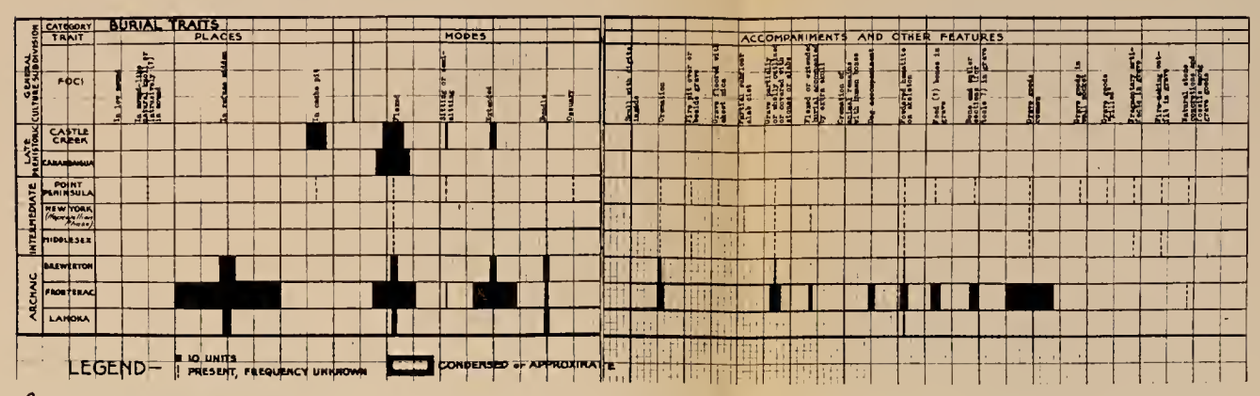
D'


CATEGORY
TRAIT
FOCI
COPPER
AWLS
GOUGES
CELTS
GOUGES
BEADS
EAR PLUGS
BATTERY DEMARCATION
SHELL
BEADS
PENDANTS
RECEPTACLES
PIGMENT
POWDERED HEMATITE
PAINTSTONES
MICA
MICA
QUARTZ
QUARTZ
TEXTILES
TEXTILES
CASTLE CREEK
CARAMBAUGH
POINT PENINSULA
NEW YORK
MIDDLESEX
BREWERTON
FRONTENAC
LAMOKA
42F
78O
LEGEND – 10 UNITS PRESENT, FREQUENCY UNKNOWN
CONDENSED or APPROXIMATE

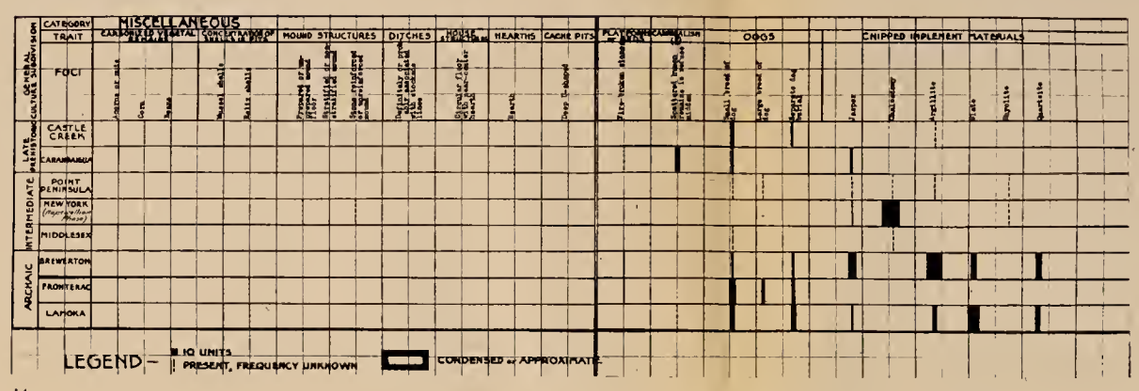
E


CATEGORY
TRAIT
FOCI
CERAMICS – VESSELS
PASTE
TEXTURE
SURFACE FINISH
DECORATION – TECHNIQUE
DECORATION – DESIGN
FORM – RIM
FORM – BODY
FORM – BASE
CERAMICS – PIPES
PIPES
CASTLE CREEK
CARAMBAUGH
POINT PENINSULA
NEW YORK
MIDDLESEX
BREWERTON
FRONTENAC
LAMOKA
LEGEND – 10 UNITS PRESENT, FREQUENCY UNKNOWN
CONDENSED or APPROXIMATE

F


CATEGORY
TRAIT
FOCI
BURIAL TRAITS
PLACES
MODES
ACCOMPANIMENTS AND OTHER FEATURES
CASTLE CREEK
CARAMBAUGH
POINT PENINSULA
NEW YORK
MIDDLESEX
BREWERTON
FRONTENAC
LAMOKA
LEGEND – 10 UNITS PRESENT, FREQUENCY UNKNOWN
CONDENSED or APPROXIMATE

G


CATEGORY
TRAIT
FOCI
MISCELLANEOUS
CARBONIZED VEGETAL REMAINS
CONCENTRATIONS OF ANIMAL BONE IN PITS
MOUND STRUCTURES
DITCHES
HOUSE STRUCTURES
HEARTHS
CACHE PITS
PLAY OR RITUAL OBJECTS
OCHRE
CHIPPED IMPLEMENT MATERIALS
CASTLE CREEK
CARAMBAUGH
POINT PENINSULA
NEW YORK
MIDDLESEX
BREWERTON
FRONTENAC
LAMOKA
LEGEND – 10 UNITS PRESENT, FREQUENCY UNKNOWN
CONDENSED or APPROXIMATE

H

SUMMARY OF TABLE 100, 11, 12

Category	LINKED TRAITS							COMMON TO ARCHAIC AND LATE PREHISTORIC						COMMON TO ARCHAIC AND INTERMEDIATE						COMMON TO INTERMEDIATE AND LATE PREHISTORIC						DIAGNOSTIC TRAITS		
		Archaic		Intermed.		L. Prehis			Archaic		L. Prehis				Archaic		Intermed.				Intermed.		L. Prehis				
	Trait	No.	%	No.	%	No.	%	Trait	No.	%	No.	%	Trait	No.	%	No.	%	Trait	No.	%	No.	%	Archaic	Intermediate	Late Prehistoric
Projectile points	narrow, stemmed, and side-notched points	1647	97.2	41	2.4	6	0.4	triangular, eared	64	98.5	1	1.5	broad, stemmed	231	95.9	10	4.1						stemmed, bifurcated	broad, side-notched, thin	
	broad side and corner-notched points	1275	91.8	104	7.5	10	0.7						semilozenge-shaped	7	18.4	31	81.6						eared, side-notched	broad, side-notched, thin, expanded base	
	triangular	190	27.8	82	12.0	411	60.2						pentagonal-shaped	5	62.5	3	37.5						side-notched, bifurcated stem	broad, side-notched, thin, beveled edges	
																								corner-notched, angular edges	
Spear points													broad, side-notched	9	90.0	1	10.0						narrow, stemmed	triangular	
																							broad, stemmed		
																							semilozenge-shaped		
Knives	retouched prismatic flake	18	90.0	1	5.0	1	5.0						retouched flake	49	92.4	4	7.6						lanceolate, convex base	thin, prismatic flake	broad, stemmed
	trianguloid	3	42.9	3	42.9	1	14.3						ovate	43	97.7	1	2.3							double-pointed	lanceolate, expanded convex base
																								thin, triangular	
Scrapers	ovate, end	164	37.4	15	3.4	260	59.2	round, end	6	1.8	330	98.2	triangular, end	26	42.6	35	57.4	trianguloid, end	4	22.2	14	77.8	keeled back, end		rectanguloid, celt-shaped
	stemmed, end	28	90.3	2	6.5	1	3.2																side-notched, end		
	retouched flake, side	23	82.1	3	10.7	2	7.1																corner-notched, end		
																							crescentic, end		
																							stemmed, side		
																							notched, side		
Drills	from rough spall	14	42.4	5	15.2	14	42.4	T-shaped base	12	13.2	79	86.8	side-notched base	5	83.3	1	16.7	triangular base	2	28.6	5	71.4	stemmed base		expanded base, lateral projections
	straight	47	90.4	4	7.8	1	1.9						expanded, scraper-edge base	2	33.3	4	66.7						tapered base		T-shaped base
	expanded, side-notched base, and expanded base	96	42.9	20	8.9	108	48.2																semilozenge-shaped base		
																							T-shaped, eared base		
	expanded rectanguloid base	1	20.0	2	40.0	2	40.0																		
Cache blades																							rude, thick, ovoid	rude, thick, ovate or trianguloid	
																								fine, thin, trianguloid	
Strike-a-lights (?)																		triangular	3	12.5	21	87.5		point, battered end	
Aberrant forms																							triangular object	large hoe-shaped blade	
																							narrow blade, parallel flaking	point, end knife-edged	
																							lanceolate blade, parallel flaking	celt, adze, and hoe	
																							sickle-shaped blade		

1 Underscored traits have marked but not specific diagnostic value.

SUMMARY OF PLATE 165, B, ROUGH STONE

Category	LINKED TRAITS	Archaic		Intermed.		L.Prehis.		COMMON TO ARCHAIC AND LATE PREHISTORIC	Archaic		L.Prehis.		COMMON TO ARCHAIC AND INTERMEDIATE	Archaic		Intermed.		COMMON TO INTERMEDIATE AND LATE PREHISTORIC	Intermed.		L.Prehis.		DIAGNOSTIC TRAITS		
	Trait	No.	%	No.	%	No.	%	Trait	No.	%	No.	%	Trait	No.	%	No.	%	Trait	No.	%	No.	%	Archaic	Intermediate	Late Prehistoric
Hammerstones	unpitted pebble	546	95.6	8	1.4	17	2.9																	multiple pitted pebble
	bipitted pebble	468	90.3	2	0.4	48	9.3																	faceted pebble
Anvil-stones	anvilstone	68	57.6	3	2.5	47	39.8																	
Pitted stones								pitted stone	20	95.2	1	4.8												
Abrading stones	tabular or pebble form	42	53.9	1	1.3	35	44.9	stationary type	4	50.0	4	50.0												
Sinew-stones																		sinewstone	3	60.0	2	40.0		
Pestles	cylindrical	130	84.9	1	0.7	22	14.4	conical	3	23.1	10	76.9												
Mullers	muller	273	98.2	1	0.4	4	1.4																	
Meal-ing stones	flat or excavated	187	85.0	4	1.8	29	13.2																	
Choppers																						chopper		
Hoes																								hoe
Disks																								disk
Net sinkers	notched	ca. 897	ca. 92.2	ca. 100	ca. 1.0	ca. 659	ca. 6.6																	
Bolas-stones	bolas-stone	3	15.0	16	80.0	1	5.0																	
Ulos																						ulo		
Steatite pots																							steatite pot	
Phallic effigies																		phallic effigy	1	25.0	3	75.0		
Iron pyrites	for fire making	2	ca. 12.5	ca. 10	ca. 62.5	4	ca. 25.0																	

1 Underscored traits have marked but not specific diagnostic value

SUMMARY OF PLATE 165, C, POLISHED STONE

Category	LINKED TRAITS: Trait	Archaic No.	Archaic %	Intermed No.	Intermed %	L. Prehis No.	L. Prehis %	COMMON TO ARCHAIC AND LATE PREHISTORIC: Trait	Archaic No.	Archaic %	L. Prehis. No.	L. Prehis. %	COMMON TO ARCHAIC AND INTERMEDIATE: Trait	Archaic No.	Archaic %	Inter. No.	Inter. %	COMMON TO INTERMEDIATE AND LATE PREHISTORIC: Trait	Intermed No.	Intermed %	L. Prehis No.	L. Prehis %	DIAGNOSTIC TRAITS: Archaic	Intermediate	Late Prehistoric
Celts	rectanguloid or trianguloid	97	62.6	17	10.9	41	26.5																		bar type chisel type thick poll type
Adzes	plano-convex	122	73.5	26	15.7	18	10.8																beveled		
Adz-like objects								plano-convex	138	92.9	3	2.1												
Gouges																						gouge		
Plummets																						plummet		
Ground slate points																						ground slate point		
Bannerstones																						bannerstone		
Gorgets																							gorget	
Pendants																	triangulloid or rectanguloid	9	47.4	10	52.6			flat, perforated pebble
Bar amulets																							bar amulet	
Boatstones																							boatstone	
Birdstones																							birdstone	
Pipes																	tubular (cigar-shaped)	1	50.0	1	50.0	tubular (blocked-end)		
																	obtuse angle elbow	4	36.4	7	63.6	bowl and stem at right angle		
																	straight-base platform	5	83.3	1	16.7	curved-base platform		

1 Underscored traits have marked but not specific diagnostic value.

SUMMARY OF PLATE 165, D, D[1] BONE AND ANTLER

Category	LINKED TRAITS								COMMON TO ARCHAIC AND LATE PREHISTORIC					COMMON TO ARCHAIC AND INTERMEDIATE					COMMON TO INTERMEDIATE AND LATE PREHISTORIC					DIAGNOSTIC TRAITS		
	Trait	Archaic		Intermed		L. Prehis			Trait	Archaic		L. Prehis		Trait	Archaic		Intermed		Trait	Intermed		L. Prehis		Archaic	Intermediate	Late Prehistoric
		No.	%	No.	%	No.	%			No.	%	No.	%		No.	%	No.	%		No.	%	No.	%			
Awls	ground or polished splinter	115	72.8	49	3.1	381	24.1		deer scapula	106	86.2	17	13.8	ground or polished splinter, notched or perforated base	42	97.6	1	2.4						deer tibia		deer rib
	deer ulna	38	59.4	9	14.1	17	26.6		deer mandible	3	15.0	17	85.0											bear ulna and radius		deer antler tine
	deer metapedial (whole or split)	59	83.1	1	1.4	11	15.5		bear tibia and fibula	7	50.0	7	50.0											beaver ulna and fibula		heron radius (split)
									lynx ulna, radius, and tibia	15	83.3	3	16.7										splanchnic bone of raccoon, perforated		
									fox ulna and radius	50	96.2	2	3.8										turkey radius		
									racoon ulna, fibula, tibia, and radius	56	98.2	1	1.8												
									splanchnic bone of bear and raccoon, imperforate	22	95.7	1	4.3												
									turkey ulna, tibia, tarsometatarsus, humerus, and femur	17	44.7	21	55.3												
									brant or goose humerus	3	75.0	1	25.0												
									decorated	2	15.4	11	84.6												
Antler handles																								antler handle for copper awl	
Double-pointed implements														double-pointed implement	113	98.3	2	1.7								
Needles	thin, curved, perforated	15	23.1	8	12.3	42	64.6																	short eyed thin, flat, perforated		
Wearing tools (?)																								flat bone section, perforated or imperforate		
Antler punches																								tine with sharpened point		
Flakers	cylindrical antler section	17	33.3	5	9.8	29	56.9		unworked antler tine	30	96.8	1	3.2												large antler cylinder	cylindrical antler section, expanded top
	chipped piece long bone	37	92.5	1	2.5	2	5.0																			
Scrapers														deer scapula	98	92.4	8	7.6								deer innominate bear mandible
Beaming tools																			deer metapodial	2	5.3	36	94.7			deer tibia bear tibia
Spatules																										flat, broad-bladed, rounded tip
Planes																										rectangulaid section of scapula

1 Underscored traits have marked but not specific diagnostic value.

SUMMARY OF PLATE 165, D, D[1] BONE AND ANTLER

Category	LINKED TRAITS: Trait	Archaic No.	Archaic %	Intermed. No.	Intermed. %	L. Prehis. No.	L. Prehis. %	COMMON TO ARCHAIC AND LATE PREHISTORIC: Trait	Archaic No.	Archaic %	L. Prehis. No.	L. Prehis. %	COMMON TO ARCHAIC AND INTERMEDIATE: Trait	Archaic No.	Archaic %	Intermed. No.	Intermed. %	COMMON TO INTERMEDIATE AND LATE PREHISTORIC: Trait	Intermed No.	Intermed %	L. Prehis. No.	L. Prehis. %	DIAGNOSTIC TRAITS: Archaic	Intermediate	Late Prehistoric
Antler wedge or billet	deer tine	3	15.8	4	21.1	12	63.2																			
Knives													long bone section	99	99.0	1	1.0						deer ulna deer scapula		
Porcupine incisor tools													whole, edge chisel-shaped	2	28.6	5	71.4								
Beaver incisor tools	variously modified	113	66.9	45	26.6	11	6.5																			
Hafted beaver incisors																								in deer antler tine	
Worked beaver mandibles																								cut anterior portion jaws	
Arrowshaft straighteners																							deer antler		
Gouges													whole or split section of long bone	2	ca. 50.0	ca. 2	ca. 50.0								
Picks																									deer antler
Pronghorn antler objects																							trap stick (?)		
Spindle-sockets(?)																							deer astragalus		
Celt sockets(?)																									deer antler "sleeve"
Gorges													gorge	141	ca. 58.1	ca. 100	ca. 41.5								
Fishhooks	unbarbed	88	74.6	3	2.5	27	22.9											barbed	2	2.3	85	97.7				
Harpoons	multiple unilateral barbs	23	ca. 43.5	ca. 25	ca. 47.2	5	ca. 9.4						single barb	1	X^2	X	X							multiple unilateral barbs and line hole	single bilateral barb
	multiple bilateral barbs	2	ca. 8.0	ca. 13	ca. 52.0	ca. 10	ca. 40.0						single barb and line hole	10	90.1	1	9.1								multiple bilateral barbs at either end

1 Underscored traits have marked but not specific diagnostic value.

2 Frequency unknown.

SUMMARY OF PLATE 165, D. D[1] BONE AND ANTLER

Category	LINKED TRAITS							COMMON TO ARCHAIC AND LATE PREHISTORIC					COMMON TO ARCHAIC AND INTERMEDIATE					COMMON TO INTERMEDIATE AND LATE PREHISTORIC					DIAGNOSTIC TRAITS		
	Trait	Archaic No.	Archaic %	Intermed. No.	Intermed. %	L.Prehis No.	L.Prehis %	Trait	Archaic No.	Archaic %	L.Prehis No.	L.Prehis %	Trait	Archaic No.	Archaic %	Intermed No.	Intermed %	Trait	Intermed No.	Intermed %	L.Prehis No.	L.Prehis %	Archaic	Intermediate	Late Prehistoric
Daggers													mammal long bone	11	68.8	5	31.2								
Club spikes(?)																		sharpened antler	4	44.4	5	56.6			
Arrowpoints	conical antler	12	34.3	16	45.7	7	20.0	flat lanceolate, bone	7	87.5	1	12.5											flat, trianguloid, bone		flat, triangular, bone terminal deer phalange
Points																									long, narrow, oval, bone
Cups																							elk antler base		
Dishes																									turtle carapace
Spoons																							of antler		of deer skull of turkey sternum
Tubes								bird bone	25	89.3	3	10.7												bird bone, serrated edge	mammal bone, large
Pendant-like artifacts																							split tine, imperforate, edges nicked		
Pendants																							split tine, perforated, edges nicked		various human bones deer epiphysis
Beads	tubular, bird bone	42	27.1	2	1.3	111	71.6																		
Pins																		carved long bone section	2	14.3	12	85.7			
Combs								small, of antler	1	33.3	2	66.7												large, of antler	
Cones																									deer phalange
Plume holders(?)																							deer styliform bone		

1 Underscored traits have marked but not specific diagnostic value.

SUMMARY OF PLATE 165 D D¹ BONE AND ANTLER

Category	LINKED TRAITS: Trait	Archaic No.	Archaic %	Intermed. No.	Intermed. %	L. Prehis. No.	L. Prehis. %	COMMON TO ARCHAIC AND LATE PREHISTORIC: Trait	Archaic No.	Archaic %	L. Prehis. No.	L. Prehis. %	COMMON TO ARCHAIC AND INTERMEDIATE: Trait	Archaic No.	Archaic %	Intermed. No.	Intermed. %	COMMON TO INTERMEDIATE AND LATE PREHISTORIC: Trait	Intermed. No.	Intermed. %	L. Prehis. No.	L. Prehis. %	DIAGNOSTIC TRAITS: Archaic	Intermediate	Late Prehistoric
Arm bands																								decorated, of antler	
Rattles	box turtle shell	7	77.8	1	11.1	1	11.1																		
Worked teeth								bear canine, apex or side perforated	21	95.4	1	4.6	elk canine, perforated	4	X[2]	X	X						wolf canine, split, edge ground	bear canine, flat sids, drilled into pulp cavity	bear canine, grooved
								bear canine, split, edges ground	1	33.3	2	66.7	wolf canine, notched or perforated	5	83.3	1	16.7						ground wolf mandible	lynx canine, one side perforated	
								dog canine, perforated or grooved	2	40.0	3	60.0												shark tooth, fossil, perforated or not	
Unworked teeth and jaws																								of various mammals	
Gaming piece(?)																								flat, bipointed, of antler	
Flutes								multipls round perforations	8	80.0	2	20.0											single oval perforation single oval, single or multiple round perforations	single round perforation	single rectangular perforation
Bar amulets(?)																								deer metapodial	
Headdress horns(?)																								deer antler, ornamented	
Worked scapulae																							perforated head of bear scapula		
Decorated bone and antler	incised rectilinear design	4	13.3	4	13.3	22	73.4	incised chevron design	3	30.0	7	70.0	incised zig-zag design	4	66.7	2	33.3	incised line-filled triangle design	11	91.7	1	8.3	striped with red paint triangular intaglio design bone and antler artifacts with carved animal head effigy	incised cross-hatch design	
	bone and antler artifacts, edges nicked	121	95.3	3	2.4	3	2.4																		

1 Underscored traits have marked but not specific diagnostic value.

2 Frequency unknown.

SUMMARY OF PLATE 165, E, COPPER - SHELL

COPPER

Category	LINKED TRAITS: Trait	Archaic No.	Archaic %	Intermed. No.	Intermed. %	L. Prehis. No.	L. Prehis. %	COMMON TO ARCHAIC AND LATE PREHISTORIC: Trait	Archaic No.	Archaic %	L. Prehis. No.	L. Prehis. %	COMMON TO ARCHAIC AND INTERMEDIATE: Trait	Archaic No.	Archaic %	Intermed. No.	Intermed. %	COMMON TO INTERMEDIATE AND LATE PREHISTORIC: Trait	Intermed. No.	Intermed. %	L. Prehis. No.	L. Prehis. %	DIAGNOSTIC TRAITS: Archaic	Intermediate	Late Prehistoric
Awls													awl	44	X[1]	X	X								
Axes																							gorge		
Celts													flat	1	20.0	3	75.0								
Gouges																							gouge		
Beads																		tubular	X	X	8	X		short, barrel-shaped	
Pins																								"double-cymbal" type	
Projectile points																								sheet silver over copper over wood	
Beads													Marginella shell	88	ca. 9.4	ca. 1,000	ca. 97.6								
Pendants								circular or rectangular conch section, center perforated	7	70.0	2	20.0	conch, whole or section	1	50.0	1	50.0								
Beads								pyriform conch section, perforated or grooved	6	85.7	1	14.3	mussel valve, unworked	1	14.3	6	85.7						oyster valve		

SHELL

- long, tubular, conch columella
- short, tubular, conch columella
- oblate, spheroidal, conch columella
- flat, rectangular, conch columella
- discoidal
- Baroque pearl
- Olivella

short, wampum-like, marine shell

circular or semicircular conch section, edge perforated

1 Frequency unknown.

SUMMARY OF PLATE 165, E, PIGMENT - MICA - QUARTZ - TEXTILES

PIGMENT

Category	LINKED TRAITS							COMMON TO ARCHAIC AND LATE PREHISTORIC					COMMON TO ARCHAIC AND INTERMEDIATE					COMMON TO INTERMEDIATE AND LATE PREHISTORIC					DIAGNOSTIC TRAITS		
	Trait	Archaic		Intermed.		L. Prehis.		Trait	Archaic		L. Prehis.		Trait	Archaic		Intermed.		Trait	Intermed.		L. Prehis.		Archaic	Intermediate	Late Prehistoric
		No.	%	No.	%	No.	%		No.	%	No.	%		No.	%	No.	%		No.	%	No.	%			
Powdered hematite																		powdered hematite	11	X[1]	X	X		powdered specular hematite	
Paintstones	hematite "crayon"	16	ca. 51.6	ca. 9	ca. 34.6	1	ca. 3.8																	graphite "crayon"	
																								MICA	
MICA																								sheet mica	
																								QUARTZ	
QUARTZ																								quarts crystal	
																								TEXTILES	
TEXTILES																		two strand twisted cord, Indian hemp	2	66.7	1	33.3			coiled basket, split twig foundation, twisted Indian hemp weft twined-woven fabric, basswood fiber (?)

1 Frequency unknown.

SUMMARY OF PLATE 165, F, CERAMICS - VESSELS -- CERAMICS - PIPES

CERAMICS - VESSELS

Category	LINKED TRAITS: Trait	Archaic No.	Archaic %	Intermed. No.	Intermed. %	L. Prehis No.	L. Prehis %	COMMON TO ARCHAIC AND LATE PREHISTORIC: Trait	Archaic No.	Archaic %	L. Prehis No.	L. Prehis %	COMMON TO ARCHAIC AND INTERMEDIATE: Trait	Archaic No.	Archaic %	Interme No.	Interme %	COMMON TO INTERMEDIATE AND LATE PREHISTORIC: Trait	Intermed. No.	Intermed. %	L. Prehis No.	L. Prehis %	DIAGNOSTIC TRAITS: Archaic	Intermediate	Late Prehistoric
Paste	temper-grit	A[2]		A		A																			
Texture	coarse	X[3]		A-R[4]		R												medium- fine	C		A				
	medium	X		A		A																			
Surface finish	cord or fabric roughened	C		A-C		A							smoothed	X		C									
Decoration-technique	incised	R		R		R							rocker-stamp	R		A[5]									applique
	punctate	R		R		R-C																			
	impressed-dentate	A		A		A																			
	cord-wound twig	R		C		R																			
Decoration-design	simple linear	C		A		A												plat	C		C-R				chevron
	herringbone	R		C		C																			
Form-rim	straight	C		A-C		R																			inverted
	everted	C		A		A																			castellated
																									collared and thickened rim
Form-body	elongated	A		A		C																			globular
Form-base	pointed	C		A		A-R																			rounded

CERAMICS - PIPES

Pipes																		slightly bent elbow	5	83.3	1	16.7	tubular	effigy
																		obtuse angle elbow	X	X	32	X	right angle	otherwise ornamented

1 Potsherds from upper level of Brewerton components only (Brewerton Focus)

2 A = Abundant, C = Common, R = Rare.

3 Frequency unknown.

4 A-R = Abundant on one site, rare on another.

5 Underscored traits have marked but not specific diagnostic value.

Category	LINKED TRAITS							COMMON TO ARCHAIC AND LATE PREHISTORIC					COMMON TO ARCHAIC AND INTERMEDIATE					COMMON TO INTERMEDIATE AND LATE PREHISTORIC					DIAGNOSTIC TRAITS		
	Trait	Archaic		Intermed.		L. Prehis.		Trait	Archaic		L. Prehis.		Trait	Archaic		Intermed.		Trait	Intermed.		L. Prehis.		Archaic	Intermediate	Late Prehistoric
		No.	%	No.	%	No.	%		No.	%	No.	%		No.	%	No.	%		No.	%	No.	%			
Places																		in cache pit	X	X	29	X	in refuse midden	in conical mound in mound-like natural knoll or intrusively (?) in mound	
Modes	flexed	77	ca. 37.2	ca. 50	ca. 24.2	80	ca. 38.6																	ossuary	
	sitting or semisitting	1	ca. 20.0	ca. 2	ca. 40.0	2	ca. 40.0																		
	extended	72	ca. 72.0	ca. 20	ca. 20.0	8[2]	ca. 8.0																		
	bundle	11	ca. 47.8	ca. 11	ca. 47.8	1	ca. 4.3																		
Features													cremation	11	ca. 33.3	ca. 22	ca. 66.7							fire pit over or beside grave	skull with digits inside
													grave partially or wholly outlined or covered with stones or slabs	17	ca. 45.9	ca. 20	ca. 54.1							grave floored with sheet mica partial subfloor slab cist	
													flexed or extended burial accompanied by extra skull	3	75.0	1	25.0							cremation of animal remains with human bones	
													dog accompaniment	6	X[3]	X	X							grave goods in wall pocket	
													powdered hematite on skeleton	11	X	X	X							grave goods "killed"	
													food (?) bones in grave	13	X	X	X							fragmentary artifacts in grave	
													bone and antler sections (for tools ?) in grave	13	X	X	X							fire making outfit in grave	
													grave goods common	70	X	X	X								
													natural stone concretions and fossils among grave goods	X	X	X	X								

1 Underscored traits have marked but not specific diagnostic value.

2 All infants.

3 Frequency unknown.

SUMMARY OF PLATE 165, H, MISCELLANEOUS

Category	LINKED TRAITS	Archaic No.	Archaic %	Intermed. No.	Intermed. %	L. Prehis. No.	L. Prehis. %	COMMON TO ARCHAIC AND LATE PREHISTORIC	Archaic No.	Archaic %	L. Prehis. No.	L. Prehis. %	COMMON TO ARCHAIC AND INTERMEDIATE	Archaic No.	Archaic %	Intermed. No.	Intermed. %	COMMON TO INTERMEDIATE AND LATE PREHISTORIC	Intermed. No.	Intermed. %	L. Prehis. No.	L. Prehis. %	DIAGNOSTIC TRAITS: Archaic	Intermediate	Late Prehistoric
Carbonized vegetal remains	acorn or nuts	X	X	X	X	X	X[1]											corn	X	X	X	X			beans
Concentration of shells in pits								mussel shell	X	X	X	X											helix shell		
Mound structures																								prepared or unprepared mound floor stratified or nonstratified mound stone reinforced or unreinforced mound shoulder	
Fortifications																									moat lines and post-mold patterns
House structures																									circular floors with near-center hearths
Hearths	hearth	X	X	X	X	X	X																		
Cache pits																		deep U-shaped	X	X	X	X			
Stone platforms								fire-broken stones (roasting beds ?)	X	X	X	X													
Cannibalism(?)								scattered human remains in refuse midden	X	X	X	X													
Dogs	small breed	17	ca. 65.4	ca. 4	ca. 15.4	5	ca. 19.2	separate dog burial	15	83.3	3	16.7	large breed of dog	4	X	X	X								
Exotic stone material	jasper	12	ca. 24.0	ca. 36	ca. 72.0[2]	2	ca. 4.0																slate quartzite	chalcedony rhyolite	
	argillite	28	ca. 73.7	ca. 5	ca. 13.2	5	ca. 13.2																		

1 Frequency unknown.

2 Underscored traits have marked but not specific diagnostic value.

TRAIT TABLE

OWASCO ASPECT

CANANDAIGUA AND CASTLE CREEK FOCI

Category	Plate No.	Figure No.	Trait	Canandaigua Focus		Castle Creek Focus	
				Canandaigua	Levanna	Castle Creek	Bainbridge
CHIPPED STONE							
Projectile points	26	1	narrow, stemmed	2			
	26	3	narrow, side-notched	4			
	26	4	broad, side-notched	2		4	2
	26	5	broad, corner-notched			1	1
	26	6-8	triangular, isosceles, straight base	52	2	3	
	26	9-13	triangular, isosceles, concave base	135	2	6	5
	26	14,15	triangular, isosceles, V-shaped concave base	50	3	3	2
	26	16	triangular, isosceles, eared base	1			
	26	17,18	triangular, equilateral, straight base	26	4	5	
	26	19-21, 23	triangular, equilateral, concave base	67	2	11	7
	26	22,24	triangular, equilateral, V-shaped concave base	15	2	5	4
Knives	26	26	trianguloid		1		
	26	2	broad, stemmed		1		
Scrapers	26	36	retouched flake, side	1			1
Saws	26	38	fragmentary point, edges serrated	1			
Drills	26	39-42	based on rough spall	12		2	
	26	43	triangular, isosceles, concave base	3		1	
			triangular, isosceles, straight base		1		
	26	44	straight	1			
	26	45	Y-shaped base	5			
	26	46	expanded, rectanguloid base	1			1
	26	50	expanded, side-notched base			1	
Strike-a-lights (?)	26	52-55	triangular, biconvex in section, with smoothed or battered base	13	1	5	2
	26	56	prismatic flint flake fused with altered iron pyrites	1			
POLISHED STONE							
Celts	26	57	rectanguloid	20	3	8	3
	26	58	trianguloid		3	3	1
	26	59	bar type	3		1	
	26	60	chisel type	2			1
	26	61	thick poll type (rectanguloid or oval in section)			3	
Adzes	26	62,63	plano-convex, rectanguloid	9	1	4	
	26	64	plano-convex, trianguloid	1		3	
Adze-like scrapers	26	65	plano-convex	2		1	

TRAIT TABLE

OWASCO ASPECT

CANANDAIGUA AND CASTLE CREEK FOCI
(Continued)

Category	Plate No.	Figure No.	Trait	Canandaigua Focus		Castle Creek Focus	
				Canandaigua	Levanna	Castle Creek	Bainbridge
POLISHED STONE							
Pendants	26	66-68	rectanguloid, one hole, fragmentary	2		4	
	46	7	flat circular, sandstone or shale pebble, c. 1 1/2 inches in diameter, countersunk central perforation, radial lines incised from center to edge		2		1
	26	69, 70	elongate pebble with grooved end	2			
	26	71	conical, from steatite pipe bowl fragment	1			
Beads			short, compressed, tubular, from steatite pipe stem	1			
Incised stones	26	57	celt, rectangle engraved on one face	1			
	26	66	pendant, reworked fragment, half of a "fringed" rectangle on one face, nicked along one edge, incised circle around perforation	1			
	26	67	pendant, in process, chevron design on one face	1			
	46	7	pendant, centrally perforated sandstone or shale disk with radially incised lines		2		1
Pipes			bowl fragment, plain, of gray steatite				1
Aberrant forms			trianguloid flat stone with smoothed edges			1	
			small, flat, chisel-shaped stone			1	
ROUGH STONE							
Hammerstones	27	1	unpitted pebble	5	8	1	3
	27	2	oval bipitted pebble	36	2	9	1
	27	3	rectanguloid, multiple pitted (4-6 pits)	5			
	27	4,5	faceted pebble			9	
	27	6	diskiform, with keeled edge	2			
Anvilstones	27	7	scarified pebble	13	20	6	8
Pitted stones	46	11	multiple conical pits				1
Abradingstones	27	9	tabular form, abraded on one or more surfaces		4		1
			tabular, incised lines on face	1			
			stationary type, cavity grooved		1	3	
Pestles	27	15	cylindrical	10	1	7	4

TRAIT TABLE

OWASCO ASPECT

CANANDAIGUA AND CASTLE CREEK FOCI
(Continued)

Category	Plate No.	Figure No.	Trait	Canandaigua Focus		Castle Creek Focus	
				Canan-daigua	Levanna	Castle Creek	Bain-bridge
ROUGH STONE							
Mullers			unilaterally smoothed pebble	1		3	
Combination tools			various combinations of hammer, anvil, and muller	8	8	20	3
Mortars			single shallow grinding surface	4	2		
			biconcave, shallow grinding surfaces			1	1
	27	11	unipitted or bipitted, with broad deep pits	8		6	1
			unipitted, opposite face has shallow grinding surface	3		3	
Hoes	27	12	trianguloid, chipped sandstone				1
Netsinkers			notched flat pebble	114	372	150	18
	27	13	notched flat pebble (ground nock)	5			
Disks	27	18	thin, chipped sandstone			2	4
	27	19	thin, chipped sandstone, notched opposite sides			29	21
Hematite paintstones	27	14	ground fragment of fossiliferous hematite	1			
Grooved stones	27	16	bolas-stone (so-called)		1		
Sinewstones	27	31	trianguloid pebble, single deep and several shallow grooves				1
	27	30	oval pebble, multiple deep and shallow grooves			1	
Decorated objects	27	22	pebble, "fringed" rectangle engraved on one face	1			
	27	17	pebble, cross-hatch oval (turtle effigy ?) engraved on one face	1			
Pyrites (for fire-making)			lump of decomposed iron pyrites, with or without chert strike-a-light	4	1	2	
NATIVE COPPER							
Beads	29	58	short, tubular, from thick hammered sheet metal	8			
BONE AND ANTLER							
Awls	28	1	rough splinter, bird and mammal long bone	148	1	33	6
	28	2-5	ground or polished splinter, bird and mammal long bone	170	6	17	

TRAIT TABLE

OWASCO ASPECT

CANANDAIGUA AND CASTLE CREEK FOCI
(Continued)

Category	Plate No.	Figure No.	Trait	Canandaigua Focus		Castle Creek Focus	
				Canandaigua	Levanna	Castle Creek	Bainbridge
BONE AND ANTLER							
Awls (cont.)	28	6	deer ulna	6	1	9	
	28	7	deer metapodial, condyle intact	2		3	
	28	8	deer metapodial, split	3		3	
	28	9	deer scapula	17			
	28	10-12	deer mandible (several parts used)	16		1	
	28	13	deer rib	3		2	
	28	14	deer styliform	1			
			elk ulna			1	
	28	15	bear tibia	2		5	
			bear splanchnic bone, base modified			1	
	28	16	raccoon fibula	1			
	28	17	lynx ulna	3			
	28	18	fox ulna	2			
	28	19	fox mandible	1			
	28	20	heron radius (split)	13		1	
	28	21	turkey ulna	2			
	28	22,23	turkey tibia	1	1		
	28	24	turkey tarsometatarsus	11	1	3	
	28	25	turkey humerus	1			
	28	26	turkey femur	1			
	28	27	deer antler tine			4	
	28	28-31	long bones, unidentified mammals and birds	21	4		
			decorated with engraved lines	11			
Needles	28	36,37	thin, curved, perforated	33	4	5	
Flakers	28	38	deer antler tine, tip scarified, base rough or smoothed	1			
	28	39-41	deer antler, cylindrical in section	21	2	6	
	28	42	deer antler, cylindrical in section, expanded top	4			
	28	43	long bone section, edges chipped	1		1	
Scrapers	28	45	deer innominate bone, long edge sharpened	1			
	28	46	bear mandible, ascending ramus sharpened	1		1	
Beaming tools	28	47	deer metapodial	32		2	
	28		deer metapodial, split	2			
			deer tibia			2	
	28	48	bear tibia			7	
Spatulas	28	44	flat, broad-bladed, rounded tip, from mammal long bone			4	2

TRAIT TABLE

OWASCO ASPECT

CANANDAIGUA AND CASTLE CREEK FOCI
(Continued)

Category	Plate No.	Figure No.	Trait	Canandaigua Focus		Castle Creek Focus	
				Canandaigua	Levanna	Castle Creek	Bainbridge
BONE AND ANTLER							
Wedges or chisels	29	1	from deer antler tine	8		3	1
Fishhooks			from curved bone, grooved or knobbed shank		3	1	1
	29	4	from flat bone, grooved or knobbed shank	1		2	
	29	2,3	in process from curved or flat section bird or mammal long bone	6		12	1
Harpoons	29	5	multiple unilateral barbs		1	1	
	29	6	single bilateral barbs, flat shank	1			
	29	7	multiple bilateral barbs	6	1		
	29	8	multiple bilateral barbs at either end	1			
	29	9	shank flat or curved, truncated base	2			
Arrowpoints	29	10	conical antler point	6		1	
	29	11	flat, lanceolate, bone point		1		
			terminal phalange of deer, ground to point			1	
Points	29	12-14	long, narrow; rectanguloid, oval or round in section; one end pointed, other tapered and blunt	3	3	10	
Flutes or whistles	29	15	with multiple round perforations	2			
Tubes	29	16	long, small diameter, from bird bone	2	1		
	29	17,18	long, large diameter, polished inside and out, from large mammal bone	4		3	1
Beads	29	19-21	short, tubular, of bird bone	75	3	29	3
	29	22	short, tubular, of mammal bone, incised decorations			1	
Celt-sockets (?)	29	23,24	section of deer antler beam, partially excavated, variously perforated, generally at bifurcation formed by truncated tine, 3 with flanges or collars around orifice	1		3	
			similar, without perforation, one concentrically scored around orifice	1		4	
			deer antler beam, partially excavated for adze handle (?)			1	

TRAIT TABLE

OWASCO ASPECT

CANANDAIGUA AND CASTLE CREEK FOCI
(Continued)

Category	Plate No.	Figure No.	Trait	Canandaigua Focus		Castle Creek Focus	
				Canandaigua	Levanna	Castle Creek	Bainbridge
BONE AND ANTLER							
Plaques	29	25,26	rectanguloid section of scapula	1		1	1
Cones	29	27,28	deer phalangeal bone, base cut off, apex perforated by notching or drilling	69		50	1
	29	29	same, articular facets nicked	3			
			same, base serrated	1			
	29	30	same, exterior ground to cone shape	25		2	
	29	31	same, decorated with incised lines	1			
			elk phalangeal bone, base cut off, apex perforated by drilling			1	
Combs	29	32	flat bone, 3 short wide teeth, plain top	1			
	29	33	antler, 3 long wide teeth, ornamented top				1
Pendants			epiphyseal caps, deer long bones, centrally or marginally perforated			2	
			elk antler, rectangular, curved, thin			2	
Picks	29	49	deer antler, brow tine sharpened to chisel edge, others removed			3	
Spoons or ladles	29	45	from crown of deer skull	6			
	29	46	from turkey sternum	2			
Scoops	29	47	half carapace of box turtle, edges and inside smoothed			1	
Dishes	29	35	box turtle carapace, smoothed all over	1		1	
Bone pins	29	40,41	polished strip of long bone; round or oval in section; top flat, rounded, obliquely truncated, or knobbed; plain or incised			8	
	30	1-3	same, head oblique, cone-shaped and incised			4	
Turtle shell rattles			box turtle shell, multiple perforations in carapace and plastron	1			
Beaver incisor tools	29	36	split, long edge or edges ground			4	
	29	37	whole, distal third to half ground, incisal edge gouge-shaped	2		1	
	29	38	whole, distal third to half ground, incisal edge chisel-shaped	1	1		

TRAIT TABLE

OWASCO ASPECT

CANANDAIGUA AND CASTLE CREEK FOCI
(Continued)

Category	Plate No.	Figure No.	Trait	Canandaigua Focus		Castle Creek Focus	
				Canandaigua	Levanna	Castle Creek	Bainbridge
BONE AND ANTLER							
Beaver incisor tools (cont.)	29	39	entire lingual surface ground away, incisal edge gouge-shaped	1			
Worked bear teeth	29	51	canine, apex grooved	2		2	
	29	52, 53	canine, split longitudinally, enamel edges ground	1	1		
	29	54	canine, immature, root perforated through posterior wall			1	
			canine, immature, apex partially grooved			1	
Worked dog teeth	29	55	canine, apex perforated	1			
	29	56	canine, apex grooved	2			
Pendants of human bone	29	50	femoral head, centrally perforated, polished	1			
			circular skull section, smoothed, marginally perforated			1	
			mandible, teeth absent, knife cuts over ascending ramus, base of condyle partially grooved			1	
Aberrant forms	29	57	narrow, polished splinter of long bone, with flattened expanded tip.	1			
	29	48	large, pointed section of bear tibia, centrally perforated at base	1			
	29	44	deer antler tine segment, partially excavated			2	
Decorated bone and antler	28	33	awl, with incised parallel vertical and horizontal lines and triangles on base	1			
	28	32	awl, incised figure similar to Iroquois "tree of life" over series of vertical parallel lines, over chevron design	1			
	28	34, 35	awls, variously decorated with combinations of incised parallel vertical, horizontal, and oblique lines, and chevron	12			
	29	9	harpoon, with incised parallel vertical and horizontal lines	1			

TRAIT TABLE

OWASCO ASPECT

CANANDAIGUA AND CASTLE CREEK FOCI
(Continued)

Category	Plate No.	Figure No.	Trait	Canandaigua Focus		Castle Creek Focus	
				Canandaigua	Levanna	Castle Creek	Bainbridge
BONE AND ANTLER							
Decorated bone and antler (cont.)	29	22	tube, mammal long bone, with incised parallel vertical and horizontal lines			1	
	29	29	deer phalangeal cone, articular facets nicked	3			
	29	31	deer phalangeal cone, with incised parallel oblique and horizontal lines	1			
	29	33	antler comb, 2 parallel horizontal lines incised at top, incised chevron design extending therefrom, and between two oblique linear openings				1
	30	1-3	pin, cone-shaped head with incised transverse lines			4	
	29	40	pin, encircling parallel lines incised near head			2	
SHELL							
Ornaments	29	60	tubular bead, short, wampum-like, polished, from marine shell	10			
	29	59	ornament, circular, center perforated	2			
	29	61	pendant, oval, perforated near edge, from mussel shell	1			
	29	62	pendant grooved top, from conch columella	1			
CERAMICS							
Vessels							
Paste							
Tempering			grit	A[1]	A	A	A
Texture			coarse		R		
			medium coarse	A	A	R	R
			medium	A	C	A	A
			medium fine	R		A	A
Hardness			2.5-3	A	A	A	A

1 A - abundant
C - common
R - rare
X - present
? - evidence not conclusive

TRAIT TABLE

OWASCO ASPECT

CANANDAIGUA AND CASTLE CREEK FOCI
(Continued)

Category	Plate No.	Figure No.	Trait	Canandaigua Focus		Castle Creek Focus	
				Canan-daigua	Levanna	Castle Creek	Bain-bridge
CERAMICS							
Vessels							
Paste							
Hardness			3-4			R	R
Color			gray-brown	A	A	A	A
			earthy brown	C	C	C	R
			buff	R		C	C
			terra-cotta	R	C	R	
Method of manufacture			coiled (clear evidence)	R	C	R	R
			paddle and anvil (?) (ware has laminated structure)	C	C	C	C
			coil sections found	R	R	R	
Surface Finish							
Treatment			roughened				
	11		- cord	C	C	C	C
	12		- fabric	C	A	C	C
	22	2	- brush	R			
Decoration							
Technique	17	6	incised	R	R	R	
	20	5	punctate		R	C	R
	18	4	dentate impressed	A	A	A	A
	46	3	combination of incised and impressed	R		C	C
	19	5	applique			C	C
Element							
incised	17	3	narrow	R	R	C	C
	17	6	broad	R		C	R
punctate	21	6	circular		R	C	
	21	5	annular			R	
	20	4	triangular		R	R	R
impressed			dentate stamp				
	18	3,4	- circular or oval	A	A	A	A
	17	2	- rectangular	R		R	
	46	1	- pointillet (or denticulate)	R		R	R
	34	6	cord-wound twig		R	R	
			coiled basket (?)		R		
			net (?)				R
	17	4	linear			R	
applique	15		effigy			R	
	19	6	ridge or bead			C	R
	21	6,9	node or boss			C	C
Design	18	5	simple linear, horizontal, vertical, oblique lines; horizontal bands	A	C	A	A
			curvilinear			R	

TRAIT TABLE

OWASCO ASPECT

CANANDAIGUA AND CASTLE CREEK FOCI
(Continued)

Category	Plate No.	Figure No.	Trait	Canandaigua Focus		Castle Creek Focus	
				Canandaigua	Levanna	Castle Creek	Bainbridge
CERAMICS							
Vessels							
Decoration							
Design (cont.)	18	6	chevron	C		C	A
	19	3	herringbone	R	A	C	C
	17	3	triangle complex			R	
	18	3,4	plat	R		A	R
	34	5	cross-hatch			R	
	11		all-over pattern		C	C	R
Distribution			rim				
	19	4a	- inside	A	A	A	A
	19	4	- outside	A	A	A	A
	19	4b	lip	A	A	A	A
	text fig. 1		shoulder	R		R	
	15		body			R	
Form							
Rim	8		straight	R	R	R	R
	9		everted	A	A	A	A
	18	5c	inverted	R			C
	18	6	castellated	R		C	A
	18	2	scalloped			R	
	17	1	crenated			R	
	17	3	collar				
	18	5c	- incipient (thickened rim)	R		C	C
	17	2c	- full			C	C
Lip	17	3b	flat	A	A	A	A
	19	2b	rounded	R	R	R	R
			pointed			R	
	19	1b	insloping	R		R	C
	19	3c	outsloping	A	A	A	C
Body	10	8,9	elongated	C	C	C	R
	10	4,5	globular			A	A
Base	text fig. 1		flat	R			R
	10		rounded	R	R	A	A
	9		pointed	A	A		
Oral	16	1	circular	A	A	A	A
	16	2	oval	C		C	C
Secondary features			inside smoothed	A	A	A	A
			drilling			R	R
Pipes	7		obtuse angle elbow type				
	7	18	- with animal effigy decoration	1			
	7	14,16,17	- with human face effigy decoration			1	4
	7	5,6	- otherwise ornamented (dentate stamp or incised technique)	22	7	7	5
	7	1-3	- plain	20	10	2	

TRAIT TABLE

OWASCO ASPECT

CANANDAIGUA AND CASTLE CREEK FOCI
(Continued)

Category	Plate No.	Figure No.	Trait	Canandaigua Focus		Castle Creek Focus	
				Canandaigua	Levanna	Castle Creek	Bainbridge
CERAMICS							
Beads			from pipe stem fragment	1			
Effigies			of turtle (?), rudely made	1			
Textiles	40	1,2	twined woven fabric (basswood (?) fiber)			2	
	40	3	braided selvage (basswood (?) fiber)			1	
	40	5,6	coiled basket, split twig foundation, twisted Indian hemp weft			2	
	41		fish line, two strand twisted hemp cord, with 19 compound thorn hooks attached by dropper lines			1	
BURIALS			flexed (degree indeterminate)	13			3
	31	1	flexed, loosely	12		8	
	31	2	flexed, tightly	25		19	
			extended (young infants)			8	
	44		bundle (multiple) (adults)			1	
	43		sitting (adult)			1	
			semisitting (adult)			1	
			skull burial with digits inside			1	
	31		single	55	39	39	3
	44		multiple	1		2	
	42		grave goods	7		5	1(?)
	text fig. 5		burial in cache pit			26	3
MISCELLANEOUS			small breed of dog	2		3	
	45		separate dog burial (single or multiple)			3	
	25	3	hearths (often in small shallow pits)	45	X	X	X
	40	4	carbonized vegetal remains (corn, beans, nuts)	X		X	X
			platforms or beds of fire-broken stones		X		
	47, text fig. 4		deep, U-shaped cache pits, sometimes containing charred grass, corn, beans, acorns and other nuts			274	43
			concentration of mussel shells in pits			X	X
	text fig. 3		shallow, broad pits	11	X		
			fire beds	4			
	25	3	hut floors, with near-center hearths	3			X?
	25	2	ditch, associated with stockade lines	X			X
	39	3	stockade lines	X			X
			scattered human remains in refuse midden, suggesting cannibalism	5			X(?)

ADDITIONAL TRAITS, VARIOUS SITES
CANANDAIGUA FOCUS,* OWASCO ASPECT

Category	Plate No.	Figure No.	Trait	Component	Frequencies
CHIPPED STONE					
Projectile points			pentagonal-shaped	Norwich	3
Knives	26	28	lanceolate, with expanded rounded base	Wilbur Lake	2
	26	25	thin, retouched, prismatic flake	St. Helena	1
Scrapers	26	31-34	oval, end (some serrated)	Turnbull	c. 90
				Enders	c. 30
				Hilltop	c. 50
				Norwich	c. 50
				Wilbur Lake	c. 40
	26	30	round, end (some serrated)	Turnbull	c. 18
				Hilltop	c. 250
				Norwich	c. 60
				Wilbur Lake	2
	26	35	trianguloid, end	Turnbull	7
				Enders	c. 10
				Hilltop	2
				Wilbur Lake	3
				Golah (Klink)	2
			stemmed, end	Enders	1
	26	37	combined side scraper and graver, from flake	St. Helena	1
			rectanguloid, celt-shaped	Turnbull	6
				Enders	1
Drills	26	51	expanded center, pointed at either end	Hilltop	1
	26	47	expanded, trianguloid or ovoid base	Turnbull	19
				Enders	5
				Hilltop	c. 80
				Jack's Reef	2
			expanded base, rectangular lateral projections	Norwich	2
	26	49	T-shaped base	Turnbull	8
				Hilltop	c. 70
				St. Helena	1
POLISHED STONE					
Pendants	38	31,32	rectangular, with multiple grooved top	Hilltop	2
				Norwich	2
Pipes			tubular, with expanded bowl, rimmed with narrow bead and decorated with parallel		

*Only traits which did not occur on the sites analyzed in the preceding table appear here. What is known of the associated elements from these components is mentioned under the site descriptions. Frequencies are given, where possible.

Category	Plate No.	Figure No.	Trait	Component	Frequencies
POLISHED STONE					
Pipes (cont.)			incised lines, material chlorite schist	Norwich	1
	34	12	obtuse angle, elbow type, of steatite	Pillar Point	6
				Jack's Reef	1
			platform type, straight base	Turnbull	1
ROUGH STONE					
Abradingstones	27	10	flat piece of sandstone, deep incised groove on face	Wilbur Lake	1
Pestles			conoidal, or roughly bell-shaped	Turnbull	1 (?)
				Jack's Reef	9
Disks			thick, rudely chipped of sandstone, c. 2" in diameter	Wilbur Lake	3
				Hilltop	2
Choppers (?)			rectanguloid, fragmentary	Turnbull	1
Pendants			oval, flat, sandstone pebble, perforated near one end	Turnbull	1
				Enders	1
Effigies			stone phallic effigy	Jack's Reef	2
				Enders	1
BONE AND ANTLER					
Awls	33	23	goose humerus	Jack's Reef	1
Fishhooks	33	4-8	barbed, with straight, grooved or knobbed shank	Jack's Reef	c. 85
Harpoons	33	14	multiple unilaterally barbed, oval or round in section, with notched flange near base for attachment	Jack's Reef	3
Arrowpoints			flat, triangular, bone point, with broad faces tapering to base	Turnbull	4
Whistles			tubular, of bird bone, with rectangular hole cut near one end	Jack's Reef	1
Beaver incisor tools			whole, natural cutting edge serrated	Jack's Reef	1
Worked elk teeth			incisor, apex grooved	Jack's Reef	1
Club spike (?)			from sharpened section of deer antler beam	Pillar Point	5
SHELL					
Ornaments			bead, from polished cylindrical section of conch columella, c. 1 3/4 inches long	Pillar Point	1
MISCELLANEOUS			chipped stone implements of jasper	Turnbull	2

TRAIT TABLE

POINT PENINSULA FOCUS, VINE VALLEY ASPECT

Category	Plate No.	Figure No.	Trait	Northrop	West Rush (Wray)	Oberlander, 2	Vinette	Pickins	Muskalonge Lake	Sea Breeze	Pt. Peninsula	René Menard Bridge, 1	René Menard Bridge, 2	Jack's Reef	Kipp Island	Fall Brook	Avon (Durkee)	Bay of Quinté, Ont.	Port Maitland, Ont.
CHIPPED STONE																			
Projectile points	75	1	narrow, stemmed		2	6	4								2	1			
	56	23	broad, stemmed			1	1			1					1				
	75	3	narrow, side-notched				1												
	54	37	broad, side-notched, thin	s	13	32	16	1		2	3	1	1		2	s			7
	54	32	same, expanded base		2	3	1												
	54	36	same, beveled edges		2														
	56	21,22	broad, side-notched, thick				8			10			2		7				
	59	19	same, round-ended			1									1				
	59	22	corner-notched	m						3					12				
			corner-notched, angular edges	1+											1				
	75	11-13	semilozenge-shaped			3	5												
	76	29-31, 35-37	triangular; straight, concave or convex base	s		8	5			2	7	3		1	9	2			1
	76	32	pentagonal-shaped								1				2				
	75	15	with triangular pointed tang				1												
	54	40-42	with serrated edges		4	1													1
Spear points	71	13	broad, side-notched			1													
	80	1	triangular, concave base																1
	70	31,42	triangular, straight base					4											
Knives	54	30	flake, edge retouched		1		1								1				1
	75	17	thick, retouched, prismatic flake				1												
	56	25	thin prismatic flake (unretouched)				2			9					20				14
	59	37	ovate, large												1				
	59	29	triangular, broad				1								1				
	75	20,21	triangular, narrow				2												
	59	15	side or corner-notched, with convex edges	X	X	X	X			X	X				X				
	85	22	rude unworked spalls and chips			s				s				s					s
Scrapers	75	22,23	ovate, end (one double-ended)			4	5					2			1				1
	75	24,25	trianguloid, end (from flake)				4												
	75	26-29	triangular, end (chipped both sides)		1	12	13	3							4				2
	75	30,31	stemmed, end				2												
	75	32	retouched flake, side				2												1

s - several
m - many
x - present

TRAIT TABLE

POINT PENINSULA FOCUS, VINE VALLEY ASPECT
(Continued)

Category	Plate No.	Figure No.	Trait	Northrop	West Rush (Wray)	Oberlander, 2	Vinette	Pickins	Muskalonge Lake	Sea Breeze	Pt. Peninsula	René Menard Bridge, 1	René Menard Bridge, 2	Jack's Reef	Kipp Island	Fall Brook	Avon (Durkee)	Bay of Quinté, Ont.	Port Maitland, Ont.
CHIPPED STONE																			
Drills	60	27	based on rough spall				1								2				2
	68	10	straight										1			1			
	71	20	expanded base		1	5	1						1		1				2
	75	34	expanded, rectanguloid base			5	2												
	59	35	expanded, side-notched base			3	1								1				
	75	36,37	same, very short point				3												
	71	19	expanded base, scraper edge			2	1	1											
	60	11	triangular, isosceles, concave base												1				1
Cache blades	60	18-26	rude, thick, ovate or trianguloid							16					144				9
	70	1-38	finely flaked, thin, trianguloid	m		150		170	c. 2,000		1	81			3	3			2
Strike-a-lights (?)	54	29	triangular, chipped both sides, battered base (one with iron pyrites)		2										1				
	54	5-7	broken projectile point (with iron pyrites)													3			
	71	34	rude trianguloid point (with iron pyrites)			1													
Aberrant forms	75	39	point, end battered blunt (for strike-a-light)				1												
	70	43,44	large hoe-shaped blade					3											
Celts	75	40	rectanguloid, of sandstone				1												
Adzes			plano-convex, of sandstone				1												
Hoes			trianguloid, of sandstone												1				
POLISHED STONE																			
Celts	71	30,31	rectanguloid			5					1				2	2			
	59	41	trianguloid												1	1			
Adzes	59	43,44	plano-convex, large (over 3 inches)	s		2					1				7	1			
	59	36	plano-convex, small			2	1				1				1		1		
Pendants	86	27	trianguloid or rectanguloid								1					1			1

TRAIT TABLE

POINT PENINSULA FOCUS, VINE VALLEY ASPECT
(Continued)

Category	Plate No.	Figure No.	Trait	Northrop	West Rush (Wray)	Oberlander, 2	Vinette	Pickins	Muskalonge Lake	Sea Breeze	Pt. Peninsula	Rene Menard Bridge, 1	Rene Menard Bridge, 2	Jack's Reef	Kipp Island	Fall Brook	Avon (Durkee)	Bay of Quinté, Ont.	Port Maitland, Ont.
POLISHED STONE																			
Pendants (cont.)	86	29	rhomboidal, truncated ends												1				
	86	35	ovoid, truncated ends, concave sides												1				
Gorgets	86	20,21	rectanguloid, narrow			8	4	1	1	5									
	86	22	rectanguloid, broad		1	5		1											
Bar amulets	86	34	narrow, plano-convex, bipointed, vertical incision on each side												1				
	86	33	both sections trianguloid, 2 perforations										1						
Birdstones	86	31	narrow type	1		1													
	86	30	broad, ridged base type, projecting "eyes"	1		1													
Tubes	86	32	cigar-shaped, of polished slate												1				
Pipes	78	2	platform type, straight base	1									1						1
	76	48	platform type, curved base								1		2						
	77	5	with bowl and stem at right angle	1															
	64	14	slightly bent elbow type									1							
Aberrant forms	56	5,6	thin, elongate object of striped slate							3									
	75	44,45	narrow, rectangular, shale object (fragmentary)				2												
Decorated objects			reworked gorget, incised lines and triangles													1			
	69	3	pipe, curved base platform, incised cross-hatch, rectangles on lip										1						
	69	1	pipe, curved base platform, groups of parallel incised lines on lip and stem										1						
ROUGH STONE																			
Hammer-stones	71	24	unpitted pebble			2	3								1	1			

TRAIT TABLE

POINT PENINSULA FOCUS, VINE VALLEY ASPECT
(Continued)

Category	Plate No.	Figure No.	Trait	Northrop	West Rush (Wray)	Oberlander, 2	Vinette	Pickins	Muskalonge Lake	Sea Breeze	Pt. Peninsula	René Menard Bridge, 1	René Menard Bridge, 2	Jack's Reef	Kipp Island	Fall Brook	Avon (Durkee)	Bay of Quinté, Ont.	Port Maitland, Ont.
ROUGH STONE																			
Anvilstones			scarified pebble			1	1									1			
Mullers	75	48	unilaterally or bilaterally smoothed pebble				1						1		1				
Pestles	68	30	cylindrical									1							
Mortars			single shallow grinding surface								1				1	1			2
Abrading-stones	59	45	tabular form, abraded on one or more surfaces		1	1	1							1					
	71	22	similar, but with incised lines on face			1				2									
	56	8,9	flat, oval or elongated pebble							9		2		1		1			1
	56	7,16	shaped sandstone pebble, narrow, bluntly pointed or chisel-like end							2									
Sinewstones	71	32	oval, thick, flat pebble; ridge, formed by deep grooves, on either side			1													
	59	41	from reworked celt, bit multigrooved												1				1
	80	3	weak grooves on whetstone																
Grooved stones	75	50	bolas-stone (so-called)				2								1	1			
	75	51	oval pebble, grooved either end				1												
Netsinkers	75	52	notched flat pebble		1	16									m				
Effigies	75	53	phallic, secondary use as hammer-stone			1													
Pyrites (for fire-making)	71	33	lump of decomposed iron pyrites, with or without chert strike-a-light		2										s	1			
Steatite pots	75	54,55	sherds only		3	10									s				
NATIVE COPPER																			
			stain on human bone, indeterminate source							1						1			

TRAIT TABLE

POINT PENINSULA FOCUS, VINE VALLEY ASPECT
(Continued)

Category	Plate No.	Figure No.	Trait	Northrop	West Rush (Wray)	Oberlander, 2	Vinette	Pickins	Muskalonge Lake	Sea Breeze	Pt. Peninsula	René Menard Bridge, 1	René Menard Bridge, 2	Jack's Reef	Kipp Island	Fall Brook	Avon (Durkee)	Bay of Quinté, Ont.	Port Maitland, Ont.
NATIVE COPPER																			
Awls	71	21	awl, round or oval in section			2	1			1			1						
	62	6	same, in antler handle							1					2				
Celts			flat celt						1										
Beads	54	51	bead, tubular, large diameter, of hammered sheet		33			13	1			9							
	56	14	bead, tubular, small diameter, of hammered sheet							46		3							
	56	13	bead, short, barrel-shaped, hole punched (?)							39									
BONE AND ANTLER																			
Awls	61	10,20	splinter, rough or polished		2	5	2			8	4+	4	5		3		1	5	2
	71	36	polished splinter, perforated base			1													
	61	19	deer ulna			1					1	2			4				1
	62	9	deer metapodial, split												1				
Double-pointed implements	82	13	flat or rounded bipointed splinter																2
Needles	82	6,7	thin, curved, perforated			1					1	1			1	2			2
Flakers	54	46	long bone section, edges chipped		1														
	65	1,2	antler, cylindrical, small								1	2			s				
	65	6	antler, cylindrical, large (may have been hafted as mallets)	s							1	1		2	5	1	4		4
Scrapers	83	21	deer scapula, head detached, vertebral edge worked										3	2	1		1		1
Beaming tools	56	43	deer metapodial							1					1				
Wedges or chisels	65	7	from deer tine	3								1							
Club spikes (?)	76	18,19	thick, ground and sharpened tine					1			3								

TRAIT TABLE

POINT PENINSULA FOCUS, VINE VALLEY ASPECT
(Continued)

Category	Plate No.	Figure No.	Trait	Northrop	West Rush (Wray)	Oberlander, 2	Vinette	Pickins	Muskalonge Lake	Sea Breeze	Pt. Peninsula	René Menard Bridge, 1	René Menard Bridge, 2	Jack's Reef	Kipp Island	Fall Brook	Avon (Durkee)	Bay of Quinté, Ont.	Port Maitland, Ont.
BONE AND ANTLER																			
Knives	76	25	mammal long bone section, sharpened rounded end								1								
Daggers	77	14	from mammal long bone, flat in section, two with shaped hilts, engraved	1		1					1								
	76	42	from mammal long bone, triangular in section, perforated base								1								
Gorges	76	7-11	short, flat or rounded, bipointed splinter								50+								26
Fishhooks	61	1	from curved bone, knobbed shank												1				
	62	11,12	from curved or flat bone, straight or knobbed shank, barbed												2				
Harpoons and projectile points	86	19	with single unilateral barb								1								
	86	17	with single barb and line hole										1						
	86	1,7	with multiple unilateral barbs and line hole								2				2				
	86	2,15	with multiple unilateral barbs								5+	2		3	9		1	1	3
	86	8,12	with multiple bilateral barbs								4+	3				2	1		
Arrowpoints	56	40	conical antler point							1		2	5	1					4
	56	37	conical antler point, with triangular tang							1									
	54	47	spike-shaped projectile (?) point	1															
Whistles	54	13	with single round perforation													1			
Tubes	63	11,23	of bird bone, end or ends serrated (one perforated, 3 ornamented with incised designs)								1				7				
Porcupine incisor tools	83	29-31	whole, edge chisel-shaped													2			3
Beaver incisor tools	68	19	split, long edges ground										2						

TRAIT TABLE

POINT PENINSULA FOCUS, VINE VALLEY ASPECT
(Continued)

Category	Plate No.	Figure No.	Trait	Northrop	West Rush (Wray)	Oberlander, 2	Vinette	Pickins	Muskalonge Lake	Sea Breeze	Pt. Peninsula	René Menard Bridge, 1	René Menard Bridge, 2	Jack's Reef	Kipp Island	Fall Brook	Avon (Durkee)	Bay of Quinté, Ont.	Port Maitland, Ont.
BONE AND ANTLER																			
Beaver incisor tools (cont.)	54	10,11	whole, root cut or broken off, edge chisel-shaped	s	1					2	12	1+			12	3	2		4
	68	31	whole, root broken off, edge gouge-shaped										2		1				
Hafted beaver incisors	55	7	one or two whole teeth with chisel-shaped edge hafted in deer antler tine or beam section																
	65	12		s	1	1				2	1	1	1		1	1	1		1
Worked beaver mandibles	56	33	anterior portion upper jaw, detached by cutting							1									
	61	22	anterior portion lower jaw, detached by cutting												3				
Worked bear teeth	65	4	canine, one side ground flat, flat side and apex drilled into pulp cavity									2							
Worked wolf teeth	68	34	canine, apex perforated										1						
Worked lynx teeth	65	5	canine, immature, perforated thru one wall									3							
Worked shark teeth	69	6-12	fossil, drilled or imperforate								1			7					
Unmodified teeth and jaws, various mammals	56	32	bear canine							4								1	
	68	18	dog canine										5		5				
			beaver incisor	X	2					3	X	X			X	X	X		
			porcupine incisor									X		X					
	56	17	woodchuck mandible							2									
			muskrat mandible							1									
	62	15	fox mandible (few cuts on ramus)												1				
Awl handles	61	5,6	short, barrel-shaped, of antler, for copper awl							1					4				
Combs	87		large, decorated, of antler											4	3		1	1	1

TRAIT TABLE

POINT PENINSULA FOCUS, VINE VALLEY ASPECT
(Continued)

Category	Plate No.	Figure No.	Trait	Northrop	West Rush (Wray)	Oberlander, 2	Vinette	Pickins	Muskalonge Lake	Sea Breeze	Pt. Peninsula	René Menard Bridge, 1	René Menard Bridge, 2	Jack's Reef	Kipp Island	Fall Brook	Avon (Durkee)	Bay of Quinté, Ont.	Port Maitland, Ont.
BONE AND ANTLER																			
Pins	61	4,11	round in section, flat or round engraved head												2				
Arm bands	63	6,7	broad, thin, of antler, decorated												2				
Beads	59	3a	short, tubular												1				
	54	15	long, tubular, incised decoration													1			
Gaming pieces (?)	62	2-5	flat, biconvex, of antler											1	4				
Rattles			from box turtle carapace												1				
Worked bone	63	15,16	bear radius, condyles much smoothed												2				
	83	22,23	eagle humerus, distal condyle smoothed																1
Unworked bone	84	a-q,z	pectoral fin spines, chiefly of catfish and bullhead								m								23
	63	17-19	long bone sections, antler tines, etc.	X	X	X			X	X	X	X	X	X	X	X	X	X	X
Decorated bone and antler	87		antler comb, incised, line-filled triangle and trapezoid figures											4	3		1		1
	77	14	dagger, flat type, incised zig-zag on blade and hilt	1							1								
	61	4,11	pin, several incised lines around flat or round head												2				
	63	6,7	arm band, with incised cross-striated parallel bands												2				
	54	15	bone bead, incised line-filled rhomboid design													1			
	63	22	tubes, with serrated end or ends, one with incised zig-zag, another with trapezoid, and a third with cross-hatch band design												6				
	65	12	hafted beaver incisor tool, incised lines around anterior end									1							
	68	41	antler haft for beaver incisor, rude cross-hatch decoration on 3 sides										1						

TRAIT TABLE

POINT PENINSULA FOCUS, VINE VALLEY ASPECT
(Continued)

Category	Plate No.	Figure No.	Trait	Northrop	West Rush (Wray)	Oberlander, 2	Vinette	Pickins	Muskalonge Lake	Sea Breeze	Pt. Peninsula	René Menard Bridge, 1	René Menard Bridge, 2	Jack's Reef	Kipp Island	Fall Brook	Avon (Durkee)	Bay of Quinté, Ont.	Port Maitland, Ont.
SHELL																			
Ornaments	67	3	bead, long tubular (over 2 in.), from conch columella									m		6	5			3	5
	67	4	bead, short tubular, from conch columella	m							8	m			4	14			
	59	2,4	bead, flat, rectangular, from conch columella												8				
	67	5	bead, oblate spheroidal, from conch columella									m							
	68	9	bead, small, thin, discoidal										42+						
	66	1	bead, Marginella, spire ground	m							6	m	m		m				
	67	2	bead, Olivella, spire ground								1	m	m		s				
	67	6	pendant, circular, perforated near edge, from conch whorl									1							
Receptacles	54	50	mussel valve, unworked		2								2		2				
Pigments	68	39	powdered hematite		1			1	1	1		1			4+		1		1
			hematite paintstone			2												s	
	54	38	limonite paintstone		1	1													
	68	38	graphite paintstone			1	1						22						
MICA	56	10	uncut sheet (biotite or muscovite)								1					1			?
TEXTILES	56	13,14	two-strand twisted cord, preserved by copper bead necklace								1								
CERAMICS																			
Vessels			(see attached Ceramic Analysis)				X								X				
Pipes	54	52	tubular		1	1													
	64	12,13, 15	slightly bent elbow type, bowl and stem section round, oval or rectangular										3		1				
	78	1	with bowl and stem nearly at right angle																1
	69	2	cone-shaped bowl, stemless type											1					
			type indeterminate					1								1			
BURIALS	81		flexed		X			?		X	X	X	X		X	X			X

TRAIT TABLE

POINT PENINSULA FOCUS, VINE VALLEY ASPECT
(Continued)

Category	Plate No.	Figure No.	Trait	Northrop	West Rush (Wray)	Oberlander, 2	Vinette	Pickins	Muskalonge Lake	Sea Breeze	Pt. Peninsula	René Menard Bridge, 1	René Menard Bridge, 2	Jack's Reef	Kipp Island	Fall Brook	Avon (Durkee)	Bay of Quinté, Ont.	Port Maitland, Ont.
BURIALS (Cont.)			multiple flexed		X					X	X	X			X				
			extended										X						
			bundle		X					X									
	57	1	multiple bundle							X			X						
			ossuary (secondary inhumation of more than 4 individuals)	X							X							X	
			multiple (flexed and bundle)		X														
	72		cremation			X		X	X	X				X					
			multiple (cremation and bundle)							X									
	73		multiple (2 or more individual bundles cremated in situ)			X													
			sitting position														X	X	X
			grave partially or wholly lined with slabs or boulders			X					X							X	
			grave or skeleton partially or wholly covered with slabs or boulders	X					X	X	X	X		X	X			X	
			grave floored with sheet mica													X			
			burial covered with powdered hematite					X	X			X	X	X		X			X
			small quantity of powdered hematite with or on bones		X					X		X	X		X				
			fire pit over or beside grave								X				X				
			pits scattered among graves			X							X		X				
			burial in cache pit		X	X													
			burial in mound-like natural knoll	X		X		X	X	X	X								
			burial intrusive (?) in mound															X	
			burial on slope of hill										X		X		X		
	81		grave goods with a majority of burials	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X
			dog remains (no entire skeleton) with burial			X									X				
			cremation of animal remains, dog bone identified, with human bundle cremations			X													
	83	25,26	mammal, bird or fish bones (food ?) in grave		X	X				X	X		X		X		X	X	X

TRAIT TABLE

POINT PENINSULA FOCUS, VINE VALLEY ASPECT
(Continued)

Category	Plate No.	Figure No.	Trait	Northrop	West Rush (Wray)	Oberlander, 2	Vinette	Pickins	Muskalonge Lake	Sea Breeze	Pt. Peninsula	René Menard Bridge, 1	René Menard Bridge, 2	Jack's Reef	Kipp Island	Fall Brook	Avon (Durkee)	Bay of Quinté, Ont.	Port Maitland, Ont.
BURIALS (Cont.)	83	20,24	unworked or partially worked bone and antler (raw material for artifact manufacture?) in grave	X	X	X				X	X	X	X	X	X	X	X	X	X
	71	27,28	fragmentary or reworked articles in grave	X	X	X		X	X	X	X	X	X		X	X	X	X	X
			natural stone concretions and fossils among grave goods															X	
	60	28-31	grave goods "killed" (?)					X			X				X				
	71	33,34	fire-making outfit (iron pyrites and chert strike-a-light) in grave			X									X	X			
			goods in pocket of grave wall		X	X			?			X			X				
MISCELLANEOUS	59	38-40	chipped implements of jasper (yellow, brown, red)				X								X				
	56	25-27	chipped implements of chalcedony (various colors)			X	X												
			chipped implements of rhyolite												X				
	59	14,15	chipped implements of argillite												X				
	70	43,44	chipped implements of exotic chert	X			X	X							X				
	76	47	ground implements of nephrite								X								
			carbonized corn		X														
			dog (large and small breed ?)			X							X		X				
			deep U-shaped cache pits		X	X													

Category	Plate No.	Figure No.	Trait	Vinette[1]	Kipp Island[2]
PASTE					
Tempering			grit	A[3]	A
			sand	R	
			sand and grit	C	R
Texture			coarse	R	C
			medium coarse	C	A
			medium	A	A
			medium fine	C	R
Hardness			2 - 2.5	R	R
			2.5 - 3	A	A
			3 - 4	R	R
Color			gray-brown	C	A
			earthy brown	C	C
			buff	A	C
			terra-cotta	C	C
Method of manufacture	74	18	coiled	X	X
			paddle and anvil (?) (ware has laminated structure)	X	X
SURFACE FINISH					
Treatment	74	17	smoothed	C	R
	74	16	roughened		
	74	19	- cord	A	A
	74	20	- fabric	A	C
			inside	A	
	74	20	outside	A	A
			inside and outside	A	
			- brush	R	
DECORATION					
Technique	58	9	incised	R	R
	58	2	punctate	R	C
	74	1	dentate impressed	A	A
	74	2	rocker stamped	A	R
Element incised			narrow	R	
	58	9	broad	R	R

1 Based on adequate series (c. 3200 sherds)

2 Based on very small series of 27 rim, 29 body sherds

3 A - abundant
C - common
R - rare
X - present
? - evidence not conclusive

CERAMIC ANALYSIS
(Continued)

Category	Plate No.	Figure No.	Trait	Vinette	Kipp Island
DECORATION (cont.)					
Element					
punctate	58	2	circular	R	C
			annular	R	
	58	7	triangular	R	R
impressed			dentate stamp		
	74	1	- circular or oval	A	A
	74	11	- rectangular	A	
			- triangular	R	
	74	7	cord-wound twig	C	C
			coiled basket (?)	R	
			net (?)	R	
	74	3	linear	R	R
rocker-stamped	74	2	square dentate	A	
	74	18	oval dentate	A	R
			line	R	
Design	74	1,5	simple linear, horizontal, vertical, oblique lines; horizontal bands	A	A
	74	18	curvilinear	R	
	74	11	herringbone	A	
			triangle complex	R	
	58	6	plat	C	C
	58	11	cross-hatch	R	C
	74	21	all-over pattern	A	R
			zig-zag	R	
Distribution			rim		
			- inside	A	A
	74	13	- outside	A	A
	74	9	lip	A	A
	74	5	shoulder	R	?
FORM					
Rim	74	16	straight	A	A
	74	6	everted	A	C
Lip	74	14	flat	C	A
	74	13	rounded	A	C
	58	14	pointed	R	R
	74	9	outsloping	A	R
Body			elongated	X	?
			globular	?	
Base			pointed	X	?
Oral			circular or oval	?	
SECONDARY FEATURES			inside scraped (channeled)	A	C
			inside smoothed	C	A
			drilling		R

TRAIT TABLE

NEW YORK FOCUS, HOPEWELLIAN PHASE

Category	Plate No.	Figure No.	Trait	Squawkie Hill Mounds	Geneseo Mound
CHIPPED STONE					
Projectile points	106	20	narrow, stemmed	2	18
			broad, stemmed, rounded base		1
	106	17	narrow, side-notched		5
	106	14-16	broad, side-notched	4	11
	92	7	broad, corner-notched	1	
	106	25-31	semilozenge-shaped		23
	106	22	triangular, straight base		1
	106	13	triangular, concave base	1	2
Knives	106	8	thin, prismatic flake	4	28
	106	41,42	thin, lanceolate		2
	106	38-40	thin, triangular	3	
Scrapers	92	19	ovate, end	1	1
	106	5	triangular, end		3
Drills	106	3,4	straight		2
	106	2	side-notched		1
	106	1	expanded base		1
Cache blades	106	53-58	rude, thick, ovate or trianguloid	31	29
Aberrant forms	106	6,11	point, end battered blunt (for strike-a-light ?)		4
	106	7,10	point, end rounded or straight, knife edge		4
POLISHED STONE					
Celts	106	45	rectanguloid		1
Adzes	97	a	plano-convex, rectanguloid	1	1
	106	46	plano-convex, trianguloid		1
Gorgets	106	32	ellipsoidal		1
	106	23	rectangular		1
			type unspecified	2	
Pipes	92	11	curved-base platform	2	
	106	35	straight-base platform, effigy		1
	106	34	straight-base platform, miniature		1
ROUGH STONE					
Hammerstones	106	44	unpitted pebble		1
	106	59	bipitted pebble		2
Abradingstones	106	51	tabular form, abraded and incised on one surface		1
Grooved stones	106	60	bolas-stone (so-called)	1	1
Pyrites (for fire-making)			lump of decomposed iron pyrites		1
Steatite vessels	106	61	sherds only (one lugged, one incised)		4

TRAIT TABLE

NEW YORK FOCUS, HOPEWELLIAN PHASE
(Continued)

Category	Plate No.	Figure No.	Trait	Squawkie Hill Mounds	Geneseo Mound
NATIVE COPPER AND SILVER	106	9	awl, round in section		1
	93	c	flat celt	1	
	93	a	ear plug, "double-cymbal" type	1	
	92	15,17	breast ornament, rectangular, of wood, covered with sheet silver over copper, part of twisted cord remaining	1	
BONE AND ANTLER					
Fishhooks	101	2	from curved bone, straight shank		1
	101	1	from flat antler section, straight shank		1
Rodent incisors	101	3,4	beaver and porcupine, unworked		2
Combs	92	16	teeth only (from one specimen)	7	
SHELL					
Ornaments	92	4	beads, baroque pearl	78	
	92	5	beads, discoidal shell	780	
Containers	106	24	large conch		1
PIGMENTS	106	50	hematite paintstone		1
	97	d	powdered specular hematite	X	
MICA	97	b	small uncut pieces	X	
QUARTZ CRYSTAL	92	2	unworked	1	
TEXTILES	92	15	two-strand twisted cord, preserved by copper cover of breast ornament	1	
CERAMICS					
Vessels	105		coarse, grit-tempered, thick ware, elongated body; conoidal base; straight sides or slightly constricted neck and mildly everted rim; fabric- or cord-malleated surface treatment on one or both surfaces; rude cord-wound-stick imprint on pot from Geneseo	X	X
Pipes	106	33	slightly bent elbow type		1
BURIALS	102		flexed	?	X
	96		extended	X	
	99		bundle		X
			multiple	X	X
	97	e	cremation	X	
	98		burial in conical mound	X	X

TRAIT TABLE

NEW YORK FOCUS, HOPEWELLIAN PHASE
(Continued)

Category	Plate No.	Figure No.	Trait	Squawkie Hill Mounds	Geneseo Mound
BURIALS (cont.)	94,95		in slab-lined and-covered partial subfloor cist	X	
	99		under heap of slabs, pebbles and small boulders on mound floor (possibly originally slab box, wood-and stone-covered)		X
			small quantity of powdered hematite on bones		X
	100		grave goods with a majority of burials	X	X
	102		trophy skull (?) near burial		X
MISCELLANEOUS			stratified (?) mound	X	
	94,104		non-stratified mound, of sand or sandy loam, flecked with charcoal, mottled or lensed	X	X
	104		prepared mound floor (humus removed, burned areas)	X	X
	95		unprepared mound floor	X	
	94		mound shoulder reinforced with slabs and large pebbles	X	
	103		hearths in mound floor		X
	103		post-mold in mound floor		X
	104		industrial material in mound earth	X	X
	104		intrusive historic period graves in mound		X
	106	8	chipped implements of chalcedony	6	30
	106	48	chipped implements of jasper		1
	106	16	chipped implements of exotic chert		1

TRAIT TABLE

MIDDLESEX FOCUS, VINE VALLEY ASPECT

Category	Plate No.	Figure No.	Trait	Holyoke, Mass.	Swanton, Vt.	Orwell, Vt.	Toll-Clute	Bradt	Palatine Bridge	Amber	Vine Valley
CHIPPED STONE											
Projectile points			notched (type not specified)						X	X	
	89	18	broad, corner or side-notched			X					X
			broad, stemmed			X					
			triangular			X			X?		
Knives	90	3	double-pointed ("willow-leaf" type)		X?			X	X		
			similar, but one end truncated								X
Cache blades	89	19	thin or medium thin, trianguloid		X	XX			X		X
POLISHED STONE											
Celts	89	15	shape unspecified (trianguloid from Vine Valley)		X	X	X				X
Adzes			plano-convex, narrow			X					X
Pendants	89	20	rectanguloid, or not specified		X						X
Gorgets	89	24	rectanguloid, or not specified		X		X				X
Bar amulets	89	21,22	plano-convex, or not specified	X	X	X					X
Boatstones			not specified		X	X	X				
Birdstones			narrow type			X					X
			oval base, head and shoulders of "bird" only		X						
Pipes	88		blocked-end tube type	X	X	X	X	X	X	X	X
	88		- of stone	X	X	X	X	X	X	X	X
			- of clay			X					
			- with small stone or clay plug		X	X					
			- containing black residue (tobacco dottle ?)			X		X			
			- engraved		X		X				
	89	12	obtuse angle elbow form, of steatite								X
Discoidal stones			biconcave		X						

TRAIT TABLE

MIDDLESEX FOCUS, VINE VALLEY ASPECT
(Continued)

Category	Plate No.	Figure No.	Trait	Holyoke, Mass.	Swanton, Vt.	Orwell, Vt.	Toll-Clute	Bradt	Palatine Bridge	Amber	Vine Valley
ROUGH STONE											
Mortars			single shallow grinding surface								X
Grooved-stones	89	10	bolas-stone (so-called)								X
Steatite pots			whole	X							
Pyrites (for fire-making)			lump of decomposed iron pyrites			X					
NATIVE COPPER											
Awls			round or square in section, or unspecified, some double-pointed	X	X	X			X		X
Celts	89	16	small, flat		X	X	X				X
Beads			bead, tubular, large or small, or unspecified	X	X	X	X		X		X
BONE AND ANTLER											
Awls	89	3,7,8	splinter, joint and unspecified				X		X		X
Daggers	89	13	flat, of fossil mastodon ivory (?)								X
Gouges	90	1	broad, rectanguloid						X		
Harpoons			single unilaterally barbed				X				
Arrowpoints	89	6	conical antler point								X
Pendants	89	14	narrow, trianguloid								X
Worked teeth			perforated elk canine						X		X
Aberrant forms	89	1	bar amulet (?), from deer metapodial bone								X
	89	4	"horn" for headdress (?), from deer antler								X
SHELL											
Ornaments	89	5	bead, long tubular, from conch columella	X					X		X

TRAIT TABLE

MIDDLESEX FOCUS, VINE VALLEY ASPECT
(Continued)

Category	Plate No.	Figure No.	Trait	Holyoke, Mass.	Swanton, Vt.	Orwell, Vt.	Toll-Clute	Bradt	Palatine Bridge	Amber	Vine Valley
SHELL											
Ornaments (cont.)	89	5	bead, short tubular, from conch columella	X	X				X		X
			bead, oblate spheroidal, from conch columella								X
	89	5	bead, discoidal								X
			bead, Marginella, spire ground		X		X		X		X
	89	2	pendant, semicircular, perforated near edge, from conch whorl								X
Pigments			powdered hematite	X	X	X			X	X	
			powdered kaolin (?)							X	
			hematite paintstone			X				X	
			graphite paintstone			X			X		
CERAMICS											
Vessels			pottery vessel, coarse grit temper, thick wall, elongated, straight side, conoidal base (?), fabric impressed surface treatment								X
Pipes	89	11	obtuse angle elbow type								X
BURIALS			flexed	X					X?		X
			extended	X					X?		
			sitting position						X?		
			bundle						X?		X
			cremation			X					
			multiple						X		X
			grave lined with slabs and with boulders						X		
			burial covered with powdered hematite	X?	X?	X			X	X	
			fire pit over or beside grave								X
			pits scattered among graves								X
			burial on slope of hill								X
			grave goods with a majority of burials	X?	X?	X	X	X	X	X	X
			burial accompanied by dog								X
			fragmentary articles in grave								X
			fire-making outfit (iron pyrites and chert strike-a-light) in grave			X					

TRAIT TABLE

MIDDLESEX FOCUS, VINE VALLEY ASPECT
(Continued)

Category	Plate No.	Figure No.	Trait	Holyoke, Mass.	Swanton, Vt.	Orwell, Vt.	Toll-Clute	Bradt	Palatine Bridge	Amber	Vine Valley
MISCELLANEOUS	90	3	chipped implements of chalcedony								X
			chipped implements of exotic chert					X	X		
			carbonized corn								X
			dog (size unspecified)								X

TRAIT TABLE

BREWERTON FOCUS, LAURENTIAN ASPECT

Category	Plate No.	Figure No.	Trait	Robinson	Oberlander
CHIPPED STONE					
Projectile points	110	13,14	narrow, stemmed	12	33
	110	1-3	broad, stemmed	78	49
	115	60,61	narrow, side- notched	12	12
	110	40-97	broad, side-notched	646	282
	110	15,16	side-notched, bifurcated stem	2	1
	110	29-39	eared, side-notched	92	3
	110	7	side-notched, angular edge	1	
	110	17, 18	stemmed, bifurcated	2	
	110	19-28	corner-notched	40	45
	115	38	semilozenge-shaped	1	6
	110	5,6	pentagonal-shaped	5	
	111	14,16	triangular, straight base	143	20
	111	20	triangular, concave base	5	3
	111	15	triangular, convex base	12	2
	111	21-26	eared, triangular	60	4
Spear points (?)	110	88	broad, side-notched	4	1
			semilozenge-shaped		1
Knives	111	59	flake, edge or edges retouched	17	5
	111	72	thick, retouched, prismatic flake	14	
	111	58	ovate	3	2
	115	37	side or corner-notched point with convex edges	38	14
			blade, with lozenge-shaped base and oblique top	1	1
Scrapers	111	49-55	ovate, end	120	33
	115	8	keeled-back, end	1	8
	111	62	round, end	2	4
	111	39,40	triangular, end	17	9
	111	45	stemmed, end	9	11
	115	10	side-notched, end	11	19
	115	9	corner-notched, end		3
	115	20-22	crescentic, end	1	32
	115	6,7	retouched flake, side	18	5
			stemmed, side	1	
	111	46	notched, side	1	
Drills	111	27	based on rough spall	6	1
	111	28	based on flake worked on one face	1	
	111	30,31	straight	13	9
			tapered base	2	2
	111	32-34	expanded base	26	18
	111	37	expanded, side-notched base	5	8
	111	35	T-shaped base	5	
	111	36,38	T-shaped, eared base	4	
	115	32	semilozenge-shaped base		3
	115	23	expanded, scraper-edge base		2

TRAIT TABLE

BREWERTON FOCUS, LAURENTIAN ASPECT
(Continued)

Category	Plate No.	Figure No.	Trait	Robinson	Oberlander
CHIPPED STONE					
Cache blades	111	67,68	rude ovoid or trianguloid blank	41	20
	111	56,57	thinned ovoid blank	39	6
Aberrant forms	115	13-15	narrow rectanguloid blade with parallel flaking		3
	111	66	lanceolate blade with parallel flaking	1	1
	115	25	small ovate blade		1
	115	26	drill-like artifact with constricted center		1
	115	17,18	sickle-shaped blade		2
POLISHED STONE					
Celts	113	30	rectanguloid	3	2
Adzes	113	31	plano-convex, rectanguloid	6	6
	116	10,11	beveled		2
Adze-like scrapers			plano-convex		3
Gouges	113	32-38	short broad type	26	10
	116	15	long narrow type		1
Bannerstones	113	27	rectangular	1	
	113	28	rectangular with two rounded corners	1	one fragment, form indeterminate
	113	25	oval	2	
	113	26	trapezoidal	2	
Plummets			ovate, grooved around top		2
ROUGH STONE					
Plummets	112	10	elongate, grooved around and over top	1	
Hammerstones	112	18-21	unpitted pebble	26	6
	112	16,17	oval bipitted pebble		1
Anvilstones	116	23	scarified pebble	10	12
Pitted stones	116	24	pebble, bipitted		2
			pebble, multiple conical pits both faces		1
			pebble, single conical pit	1	
	118		boulder, multiple conical and cup-shaped pits, one face		1
Abradingstones	116	3	tabular form, abraded on one or more surfaces	18	5
	116	2	similar, but with incised lines on face	2	2
Pestles	116	21	cylindrical	10	6
	112	12	conical-shaped	3	
Mullers	112	15	unilaterally or bilaterally smoothed pebble	8	14
Combination tools	112	16,17	various combinations of hammer, anvil and muller	19	19
Mortars	118		single shallow grinding surface	4	3

TRAIT TABLE

BREWERTON FOCUS, LAURENTIAN ASPECT
(Continued)

Category	Plate No.	Figure No.	Trait	Robinson	Oberlander
ROUGH STONE					
Choppers	112	6	amygdaloid	28	35
	112	11	oval	25	15
	112	8,9	rectanguloid	20	25
	112	7	hoe-shaped	2	1
	112	5	irregular	5	3
Netsinkers	112	4	notched flat pebble	50	98
	116	25	biface muller with grooved ends		1
Hematite paint-stones	112	3	ground fragments of fossiliferous hematite	4	3
			ground nodule of compact hematite	1	
Tablets			engraved paint palette (?)	1	
Ulo	119		of sandstone, chipped on all edges		1
NATIVE COPPER					
Copper artifacts	113	18	awl	12	23
	113	19	gorge	8	10
	113	20	gouge	1	
	113	17	axe	1	
	117	26	chisel (?)		1
BONE AND ANTLER					
Awls	117	50,51	rough splinter, bird and mammal long bone	3	40
	117	57-60	ground or polished splinter, bird and mammal long bone	3	35
	117	44,45	polished splinter, perforated base		5
			deer ulna		1
	117	69	bear ulna		1
	113	21	bear radius	1	
	117	72	splanchnic bone of bear		2
	117	40	splanchnic bone of raccoon		1
	117	70	raccoon fibula		1
			lynx ulna	1	1
			fox ulna		3
	113	23,24	long bones unidentified small mammals and birds	2	18
Double-pointed implements	117	46-49	flat or rounded bipointed splinter		4
Needles	117	41,42	thin, curved, perforated	3	9
	117	31,43	thin, flat, perforated		4
Flakers	117	64	deer antler tine, tip scarified, base rough	1	8
	117	67,68	long bone section, edges chipped		5
	117	65	antler, cylindrical in section		1

TRAIT TABLE

BREWERTON FOCUS, LAURENTIAN ASPECT
(Continued)

Category	Plate No.	Figure No.	Trait	Robinson	Oberlander
BONE AND ANTLER					
Scrapers			deer scapula, vertebral edge worked	1	
	117	16	deer scapula, head detached, vertebral edge worked		1
Spatulate implements			long bone section, broad blade, round tip		7
Punches	117	62,63	elk and deer antler tines with sharpened point		3
Knives	117	71	deer ulna, sharpened rounded end		2
	117	56	mammal long bone section, sharpened rounded end		1
Harpoons	117	9,10	with multiple unilateral barbs, widely spaced		3
	117	24	with single barb and line hole		3
	117	23	bilaterally barbed lance head		1
Arrowpoints	117	52-54	conical antler point		6
	113	15	flat, lanceolate, bone point	1	
Tubes	117	33	of bird bone, varying lengths and diameters	1	5
Beads	117	34	short, tubular, of bird bone		1
Beaver incisor tools	117	35,36	split, long edge or edges ground	8	11
	117	39	whole, distal third to half ground, edge chisel-shaped		9
	117	37,38	whole, lower lingual or lateral surface gouge-shaped		7
			whole, edge chisel-shaped		3
Worked bear teeth	117	32	canine, grooved above crown, root tapered		1
Deer antler pendant-like artifacts	117	66	split tine object, fragmentary		4
Worked bone and antler			deer antler tines, detached by burning, breaking, or cutting	1	10
Decorated bone and antler			harpoon base with 4 parallel longitudinal rows of short oblique incisions		1
			awl (?) fragment, with row of short gouged depressions along one side		1
	117	55	pronghorn antler flaker (?); front and back have 3 groups parallel, longitudinal, incised lines, bordered either side by series of dots; sides and top bear closely spaced transverse incised lines		1

TRAIT TABLE

BREWERTON FOCUS, LAURENTIAN ASPECT
(Continued)

Category	Plate No.	Figure No.	Trait	Robinson	Oberlander
POTTERY			temper- grit	X	X
			texture- medium	X	X
			- coarse	X	X
			thickness- medium	X	X
			- thick	X	
			surface- rough	X	X
			- smooth	X	X
			hardness- 2.5- 3.5	X	X
			color- gray	X	X
			- buff	X	X
			- tan	X	X
			- terra-cotta	X	X
	114	22	shape- straight sides	X	?
	117	30	- pointed bottom	?	X
	114	10	- slightly globular, constricted rim	X	X
	114	19	rim- straight	X	?
	114	7	- everted	X	X
	114	19	lip- flat	X	X
	114	15	- round	X	X
			- insloping		X
	114	7	- outsloping	X	X
	114	1	surface treatment- fabric and cord impressed		
			on outside only		X
	114	1,2	on both surfaces	X	X
	114	20,21	-subsequent partial smoothing	X	X
	114	29	-exterior smooth		X
	114	33	-interior smooth	X	X
	114	24,30	-interior channeled	X	X
	114	17	decoration (technique) - annular impressions	X	
	114	26	- cord-wound stick impressions	X	
	114	5,8	- denticulate stamp impressions	X	X
	114	25	- coiled basketry (?) impressions	X	
	114	34	- scallop shell (?) impressions	X	
			- large triangular impressions	X	X
	114	16,29	- comb-marked	X	X
			- incised (broad)		X
			- finger nail impressions		X
	114	5,14	decoration (design) - horizontal, oblique or vertical lines	X	X
	114	13	- herringbone	X	X

TRAIT TABLE

BREWERTON FOCUS, LAURENTIAN ASPECT
(Continued)

Category	Plate No.	Figure No.	Trait	Robinson	Oberlander
POTTERY	114	9	- rocker stamp	X	X
			- criss-cross	X	
			method of construction - coil	X	X
			- laminate	X	
	114	14	decoration (occurrence) - on rim exterior	X	X
			- on rim interior	X	X
	114	29	- on shoulder	X	X
			- on body	?	?
BURIALS			flexed (degree indeterminate)	4	3
			flexed, tightly		1
	120		extended		7
			- supine		5
	121		- prone		2
			bundle	1	3
			cremation	1	1
			combinations of above		2
			single interment	6	17
	121		multiple interment		2
			grave goods		5
	120		powdered hematite on skeleton		1
			inhumation in refuse midden	6	17
			partially covered with stones	1	1
MISCELLANEOUS			small breed of dog		2
			separate dog burial		2
			pits	X	X
			hearths	X	X
			bed of fire-broken stones		1
			chipped stone implements of jasper	9	1
			chipped stone implements of argillite	19	3
			chipped stone implements of slate	9	
			chipped stone implements of exotic chert	6	3
			chipped stone implements of quartzite	9	1

TRAIT TABLE

FRONTENAC FOCUS

Category	Plate No.	Figure No.	Trait	Frontenac Island
CHIPPED STONE				
Projectile points	147	1-14	narrow, stemmed	541
	147	15	narrow, stemmed, from flake, edges only chipped	2
	147	16-22	broad, stemmed	104
	147	23	broad, stemmed, from flake, edges only chipped	1
	147	24-29	narrow, side-notched	132
	147	30-42	broad, side-notched	178
	147	43	broad, side-notched, from flake, edges only chipped	3
	147	44	side-notched, bifurcated stem	2
	147	45-46	eared, side-notched	8
	147	47-51	corner-notched	34
	147	52-54	triangular, straight base	3
Spear points	147	55	broad, stemmed	7
Knives	147	56	flake, edge or edges retouched	9
	147	57	thick, retouched, prismatic flake	3
	147	58	thin, retouched, prismatic flake	1
	147	59	flake, side-notched, edge or edges retouched	1
	147	60	flake, stemmed, edge or edges retouched	1
	147	61	ovate	2
	147	62	trianguloid	3
	147	63	side or corner-notched point with convex edges	21
Scrapers	147	64	ovate, end	7
	147	65	double-ended, plano-convex	1
	147	66,67	stemmed, end	6
	147	69	side-notched, end	5
	147	70	corner-notched, end	2
	147	68	crescentic, end	1
Drills	147	71	based on rough spall	3
	147	72,73	straight	16
	147	74	tapered base	1
	147	75,76	expanded base	15
	147	77	expanded corner-notched base	1
	147	79	expanded stemmed base	1
	147	78	side-notched base	1
	147	80,81	T-shaped base	6
	147	82	T-shaped, eared base	2
Cache blades	147	83	rude oval blank	25
Aberrant forms	147	84	narrow, rectanguloid blade, with parallel flaking	1
POLISHED STONE				
Celts	148	1	rectanguloid	6
	148	2	rectanguloid with expanded bit	1
	148	3	rectanguloid with contracted bit	2
			rectanguloid, notched	1

TRAIT TABLE

FRONTENAC FOCUS
(Continued)

Category	Plate No.	Figure No.	Trait	Frontenac Island
POLISHED STONE				
Adzes	148	4	plano-convex, rectanguloid	7
	148	5	plano-convex, trianguloid	1
	148	6,7	beveled	2
Adze-like scrapers		-	plano-convex -	3
Gouges	148	8	short broad type	1
Bannerstones	148	9-12	crescentic	5
Plummets	148	13	ovate, grooved around top	1
	148	14	elongate, grooved around top	1
	148	15	elongate, grooved around and over top	2
	148	16	elongate, circular, flat, expanded top	2
	148	17	elongate, oval, keeled, expanded top, notched either side	1
	148	18	elongate, rounded, expanded top	1
Slate points	148	19	broad blade, straight stem	1
	148	20	narrow blade, serrated stem	1
Ulo (?)	148	21	fragment, of slate, engraved	1
ROUGH STONE				
Hammerstones	149	1	unpitted pebble	2
	149	2	oval bipitted pebble	12
Anvilstones	149	3	scarified pebble	7
Pitted stones	149	4	pebble, bipitted	3
Abradingstones	149	5	tabular form, abraded on one or more surfaces	5
	149	6	similar, but with incised lines on face	2
	149	7	tongue-shaped pebble, abraded on both surfaces	2
Pestles	149	19	cylindrical	9
	149	8	erratic-shaped (from concretion)	1
Mullers	149	9	unilaterally or bilaterally smoothed pebble	6
Combination tools	149	10	various combinations of hammer, anvil and muller	28
Mortars			single shallow grinding surface	6
Choppers	149	11	amygdaloid	8
			oval	5
	149	12	rectanguloid	8
			narrow, rectanguloid, notched	1
	149	13	hoe-shaped	1
	149	14	irregular	1
Netsinkers			notched flat pebble	c.130
Hematite paintstones	149	15	ground fragment of fossiliferous hematite	3

TRAIT TABLE

FRONTENAC FOCUS
(Continued)

Category	Plate No.	Figure No.	Trait	Frontenac Island
ROUGH STONE				
Perforated stones	149	16	naturally perforated, oval or irregular, eroded, limestone pebble (from burials)	13
Pebbles	149	17	natural, spherical, of limestone (from burial)	1
Pyrites (for fire-making)	149	18	lumps of decomposed iron pyrites (from burials)	2
NATIVE COPPER				
Copper artifacts	148	22	awl	9
	148	23	foliated fragment	1
BONE AND ANTLER				
Awls	150	1	rough splinter, bird and mammal long bone	34
	150	2	ground or polished splinter, bird and mammal long bone	26
	150	3	rough or ground splinter, notched base	1
	150	4	polished splinter, perforated base	2
	150	5	deer ulna	3
	150	6	elk ulna	1
	150	7	deer metapodial, condyle intact	1
	150	8	deer metapodial, split	7
	150	9	deer scapula	5
			bear ulna	1
	150	10	splanchnic bone, raccoon	1
			fox ulna	1
	150	11	turkey radius	5
	150	12	turkey tarsometatarsus, with spur core	1
			eagle humerus	1
	150	13	radius bird (sp.?), pointed both ends	1
	150	16	long bones, unidentified mammals and birds	9
Double-pointed implements	150	14	flat or rounded bipointed splinter	49
Needles			thin, curved, perforated (?)	2
	150	15	short, eyed	1
Flakers	150	17	deer antler tine, tip scarified, base rough	6
	150	18	long bone section, edges chipped	5
	150	19	long bone section	1
	150	20,21	antler, cylindrical in section	13
	150	22,23	antler, rectangular in section	3
Scrapers	150	24,25	deer scapula, head detached, vertebral edge worked	17
Punches	150	26	deer antler tine with sharpened point	2
Wedges or chisels	150	27	from deer antler tine	1

FRONTENAC FOCUS
(Continued)

Category	Plate No.	Figure No.	Trait	Frontenac Island
BONE AND ANTLER				
Knives	150	28	deer ulna, sharpened rounded end	5
	150	29	mammal long bone section, sharpened rounded end	5
Arrowshaft straighteners	150	30	complete deer antler, two perforations	1
			portion deer antler beam, single perforation	1
Gouges			whole section of long bone	1
	150	31	split section of long bone	1
Daggers	151	1,2	from mammal long bone, trianguloid in section, edges sharpened (hilt of one striped with red paint)	3
Gorges	151	3	short, flat or rounded bipointed splinter	55
Fishhooks	151	4	from curved bone, straight shank	1
	151	5-8	from flat bone, grooved or knobbed shank	5
	151	9,10	in process from curved section bird or mammal bone	3
	151	11	in process from flat section mammal bone	4
Harpoons	151	12	with single unilateral barb	1
	151	13	with multiple unilateral barbs, closely spaced	12
	151	14-16	with multiple unilateral barbs, widely spaced	8
	151	17	with multiple bilateral barbs	2
	151	18-20	with single barb and line hole	6
	151	21	with flat tapered tang, imperforate	10
	151	22	with flat expanded tang, imperforate	1
	151	23	with plano-convex tang, tapered to base from knob on convex edge	1
Arrowpoints	151	24	conical antler point	4
	151	25	flat, lanceolate, bone point	6
Spoons	151	26	antler, effigy handle, perforated	1
	151	27	antler, broad handle, perforated	1
Cups	151	28	excavated and smoothed base of shed elk antler	1
Flutes or whistles	151	29	with single oval perforation	1
	151	30,31	with single oval and single opposite round perforation (one engraved)	2
	151	32,33	with single oval perforation, and multiple round perforations	2
	151	34	with multiple round perforations	3
Tubes	151	35,36	of bird bone, varying lengths and diameters	3
Plume holders (?)			deer styliform bone, unmodified	7
	152	1	deer styliform bone, base perforated	5
	152	2	deer styliform bone, base perforated, point sharpened	3
	152	3	similar in form, but made from long bone splinter	2

TRAIT TABLE

FRONTENAC FOCUS
(Continued)

Category	Plate No.	Figure No.	Trait	Frontenac Island
BONE AND ANTLER				
Porcupine incisor tools	152	4	whole, edge chisel-shaped	2
Beaver incisor tools	152	5,6	split, long edge or edges ground	6
	152	7	whole, distal third to half ground, chisel-shaped	8
	152	8	whole, lower, lingual surface gouge-shaped	1
	152	9	whole, lower lateral surface deeply hollowed out	2
	152	10	whole, edge chisel-shaped	2
	152	11	whole, lateral surface ground flat	1
Worked wolf mandibles	152	12,13	rami cut away, base ground	4
Worked wolf teeth	152	15	canine, perforated through apex	3
	152	16	molar, root ground	1
Worked bear teeth	152	17-19	canine, immature, perforated anterior wall	20
	152	14	canine, adult, perforated apex	1
Worked elk teeth	152	20,21	canine, perforated apex	4
Worked teeth	152	22	canine, (sp. ?), perforated apex	1
Claw cores	152	23	small hawk, unworked	2
	152	24	black bear, unworked	37
Turtle-shell rattles	152	25	box turtle, multiple perforations of carapace	2
Deer antler pendants	152	26	split tine, apex perforated (upper portion only)	1
			split tine, apex perforated, triangular series in intaglio on face, striped with red paint (upper portion only)	1
Deer antler pendant-like artifacts	152	27,28	split tine object, imperforate, long edges nicked, end truncate	2
	152	29,30	split tine object, long edges nicked, fragmentary	4
			split tine object, fragmentary	4
			flat tine object, imperforate, bluntly pointed, edges scored in places	1
Combs	152	31	antler, 6 teeth, effigy top	1
Raw bone material			sections unworked long bone (burial goods)	13
Worked bone and antler	152	32	section pronghorn deer antler, base smoothed, beam scraped	1
	152	33	squared section antler beam, nicked on two long edges	1

TRAIT TABLE

FRONTENAC FOCUS
(Continued)

Category	Plate No.	Figure No.	Trait	Frontenac Island
BONE AND ANTLER				
Worked bone and antler (cont)			deer antler tines, detached by burning, breaking, or cutting	10
Decorated bone and antler	152	34	line-filled triangle design on fragmentary bone artifact	1
	152	35	antler flaker, narrow parallel gouged lines on all four sides	1
	151	2	bone dagger, hilt striped with red paint	1
	151	31	bone whistle, triangle series in intaglio on front'	1
	152	26	antler pendant, triangle series in intaglio on face, striped with red paint	1
	151	26	antler spoon, effigy handle	1
			other bone and antler artifacts with nicked edges, specified above	7
SHELL				
Ornaments	152	36	pendant, whole oyster valve, apex perforated	1
	152	37	pendant, rectangular conch shell section, center perforated	1
	152	38,39	pendant, pyriform conch shell section, apex perforated	5
	152	40,41	ornament, circular conch shell section, center perforated	6
	152	44	beads, Marginella	25
	152	42	curved piece worked conch shell	1
Receptacles	152	43	receptacle, from large end of conch shell	1
	152	45	mussel valve for paint receptacle	1
BURIALS			flexed (degree indeterminate)	13
	127		flexed, loosely	37
			flexed, tightly	13
	130		extended	65
	130		- supine	64
			- prone	1
	142		bundle	3
	141		cremation	9
			semisitting	1
	134		combinations of above	6
	132		single	122
	143		multiple	15
	136		grave goods	70
			dog accompaniment	6
			powdered hematite with or on skeleton	10
	125		inhumation in refuse midden	159
	145			
	125		partially outlined or covered in whole or part with stones	15
	126		flexed or extended burial accompanied by extra skull	3
			bird or fish bones (food ?) in grave	2
			unworked bone (raw material) in grave	1
			fragmentary articles in grave	6

TRAIT TABLE

FRONTENAC FOCUS
(Continued)

Category	Plate No.	Figure No.	Trait	Frontenac Island
BURIALS (cont.)			natural stone concretions among grave goods	2
MISCELLANEOUS			small breed of dog	8
			large breed of dog	4
			separate dog burial	6
			shallow pits	X
	138		hearths	X
			carbonized vegetal remains (nuts)	X
			concentration of mussel shells in pits	X
			concentration of helix shells in pits	X
			bed of fire - broken stones	1
	128		heap of water-worn pebbles, pot-stones(?)	6
			burial of bald eagle	1

TRAIT TABLE

LAMOKA FOCUS

Category	Plate No.	Figure No.	Trait	Lamoka	Geneva	Scotts-ville
CHIPPED STONE						
Projectile points	154	1-6	narrow, stemmed	289	34	59
	154	7-13	narrow, side-notched	355	102	66
	154	14,15	broad, side-notched	31	19	
	154	16	side-notched, bifurcated stem			1
	154	17	stemmed, bifurcated	1	1	
	154	18	triangular, straight base	1	1	
Spear points	154	19	narrow, stemmed	2	1	
	154	20	narrow, stemmed, with expanded base	14		1
	154	21	broad, side-notched	2	2	
	154	22	trianguloid, with convex base	1		
Knives	154	23	flake, edge or edges retouched	2	1	5
	154	24	ovate	12	21	3
	154	25	lanceolate, with convex base	17	4	3
	154	26	side or corner-notched point, with convex edges	3	3	3
	154	27	side-notched flake, with retouched convex edges	1		
Scrapers	154	28	ovate, end		3	1
	154	29	stemmed, end	1		1
	154	30	side-notched, end		1	
Drills	154	31	based on rough spall	1	3	
	154	32	straight	9		distal
	154	33	double-pointed		1	portion
	154	34	expanded base	12	3	
	154	35	expanded, side-notched base	5	3	of one
	154	36	side-notched base	4		
	154	37	T-shaped base	1		
	154	38	stemmed base	1	1	
			expanded rectanguloid base	1		
Cache blades			rude ovoid blank	28	7	
Aberrant forms	154	39	scalene or obtuse triangular-shaped object			2
POLISHED STONE						
Celts	154	40,46	rectanguloid	68	2	1
	154	47	trianguloid	7	1	3
Adzes	154	42,48	plano-convex, rectanguloid	87	2	2
	154	41	plano-convex, trianguloid	11		
	154	43,49	beveled	25	6	1
Adze-like scrapers	154	44,50	plano-convex	125	1	6
Aberrant forms	154	45	flat trianguloid stone with smoothed edges (abradingstone ?)	3		

TRAIT TABLE

LAMOKA FOCUS
(Continued)

Category	Plate No.	Figure No.	Trait	Lamoka	Geneva	Scottsville
ROUGH STONE						
Hammerstones	155	1	unpitted pebble	505	5	2
	155	2	oval bipitted pebble	452	2	1
	155	3	ovate hammer or club head	1		
Anvilstones	155	4	scarified pebble	30	6	3
Pitted stones	155	5	pebble, bipitted		3	2
			pebble, multiple conical pits, one face	2		4
			boulder, multiple conical pits, one face			1
Abradingstones	155	6	tabular form, abraded on one or more surfaces	2		
	155	7	pebble, with incised lines on face	1	2	
	156	1	stationary type, cavity grooved	4		
Pestles	155	17	cylindrical	95	5	5
Mullers	157	1	unilaterally or bilaterally smoothed pebble	238	2	5
Combination tools			various combinations of hammer, anvil and muller	187	8	4
Mortars			flat surface	10		
			single shallow grinding surface	40	2	2
			single deep grinding surface	78		
	157	2	biconcave, deep or shallow	38		
	155	18	bowl-shaped	2		
	156	2	trough-shaped, single	1		
	156	3	trough-shaped, double	1		
Choppers	155	8	amygdaloid		3	6
	155	9	oval		9	7
	155	10	rectanguloid	28	12	13
	155	11	hoe-shaped	1	2	3
Netsinkers	155	12	notched flat pebble	c. 8,000	c. 700	1
Hematite paintstones	155	13	ground fragment of fossiliferous hematite		1	4
Perforated stones	155	14	oval sandstone pebble, drilled (?) perforation	1		1
			flat, limestone slab, natural (?) perforation		2	
			naturally perforated, oval, eroded, limestone pebble	1		
Grooved stones	155	15	club head (?)	3		
	155	16	sinker (?), from oval pebble, sides grooved	1		
			sinker (?), from heart-shaped pebble, ends grooved	1		
	155	19	bolas-stone (so-called)	3		
Incised stones	155	20	sandstone fragment, tessellate design			1

LAMOKA FOCUS
(Continued)

Category	Plate No.	Figure No.	Trait	Lamoka	Geneva	Scotts-ville
BONE AND ANTLER						
Awls	158	1,2	rough splinter, bird and mammal long bone	633	71	29
	158	3-6	ground or polished splinter, bird and mammal long bone	258	14	6
	158	7,8	rough or ground splinter, notched base	21	1	4
	158	9	polished splinter, perforated base	8		
	158	10,11	deer ulna	25		3
	158	12	deer ulna, distal portion minus condyle	5		
	158	13	deer tibia	17	1	
	158	14	deer metapodial, condyle intact	27		1
	158	15	deer metapodial, split	22	1	
	158	16	deer radius	1		
	158	17,18	deer scapula	101		
	158	20	deer mandible	3		
	158	19	cornu of hyoid bone of deer	1		
	158	21	bear fibula	3		
	158	22	bear tibia	4		
	158	23	splanchnic bone of bear	7		1
	158	24	splanchnic bone of raccoon	8	1	1
	158	25	splanchnic bone of raccoon, perforated through base	4		2
	158	26	raccoon ulna	4		
	158	27	raccoon fibula	42	1	4
	158	28	raccoon tibia	2		
	158	29	raccoon radius	2		
	158	30	lynx ulna	10		1
	158	31	lynx radius	1		
	158	32	lynx tibia	1		
	158	33	beaver ulna	2		
	158	34	beaver fibula	1		
	158	35	immature muskrat or beaver tibia	2		
	158	36	otter (?) tibia	1		
	158	37	fox ulna	31	7	1
	158	38	fox radius	7		
	158	39	pathological mammal long bone	1		
	158	40-44	turkey radius (head detached from fig. 44)	514	3	6
	158	45	turkey radius, pointed both ends	1		
	158	46	turkey ulna	1		
	158	47	turkey tibia	3	1	
	158	48	turkey tarsometatarsus	11		
	158	49	blue heron mandible	1		
	158	50	brant or goose humerus	3		
	158	51	dorsal fin spine of large fish (?), basal perforation			1
	158	52-56	long bones, unidentified mammals and birds	14	2	3
	158	57,58	decorated with nicked edges or parallel engraved lines	2		

TRAIT TABLE

LAMOKA FOCUS
(Continued)

Category	Plate No.	Figure No.	Trait	Lamoka	Geneva	Scotts-ville
BONE AND ANTLER						
Double-pointed implements	159	1-3	flat or rounded bipointed splinter	51	2	4
	159	4	similar, but grooved near one end	2		
	159	5	similar, but scored near center	1		
Needles	159	6	thin, curved, imperforate (in process)	1		
Flakers	159	7	deer antler tine, tip scarified, base rough or smoothed	12	2	1
	159	8	long bone section, edges chipped	17	2	4
	159	9	spine of deer scapula	4		
Scrapers	159	10	deer scapula, head detached, vertebral edge worked	72	2	4
			similar, but with perforated base	1		
Punches	159	11	deer antler tine with sharpened point	12	2	1
Wedges or chisels	159	13	from deer antler tine	1		1
	159	12	from deer scapula	1		
Knives	159	14,15	deer ulna, sharpened rounded end	223	2	1
			deer ulna, distal portion minus condyle, sharpened rounded end	20	1	
	159	17	similar, but with side-notched base	3		
	159	16	mammal and bird long bone section, sharpened rounded end	58	4	4
	159	18	mammal and bird long bones, whole, sharpened rounded end	27		
	159	19	deer scapula, sharpened rounded end	2		
Arrowshaft straighteners	159	20	large tine, single perforation, tip grooved	1		
Daggers	159	21	from mammal long bone, trianguloid in section, edges sharpened	3		
			from mammal long bone, biconvex in section, edges sharpened			1
	159	22	from mammal long bone, round in section, stiletto-like	1		
	159	23	from whole bear ulna, subtriangular in section, condyle forms hilt, stiletto-like (one striped with red paint	2		
	159	24	from whole mammal long bone, trianguloid in section, condyle forms hilt, stiletto-like	1		
Weaving tools (?)	159	25	flat, elliptical, long bone section, imperforate (some have edges nicked)	9	2	2
	159	28	flat, elliptical, long bone section, perforated one end (some have edges nicked)	7	2	

LAMOKA FOCUS
(Continued)

Category	Plate No.	Figure No.	Trait	Lamoka	Geneva	Scotts-ville
BONE AND ANTLER						
Weaving tools (?) (cont.)	159	26,27	flat, elliptical, long bone section, perforated near center on one long edge (some have edges nicked)	10		
	159	29	flat, elliptical, long bone section, perforated near center	3	1	
Spindle sockets (?)	159	30,31	deer astragalus, partially or completely perforated			11
Pronghorn antler objects	159	32-35	tapered to blunt point, broad hollow worked on one side, base smoothed or ornamented with nicks or animal effigy	19		
Gorges	160	1	short, flat or rounded, bipointed splinter	86		
Fishhooks	160	2	from curved bone, straight shank	2		
	160	3,4	from curved bone, grooved or knobbed shank	5		1
	160	5	from flat bone, grooved shank (shank partly missing from one)	4		1
	160	6-8	in process from curved or flat section bird or mammal long bone	55	3	4
Harpoons	160	9	with single barb and line hole	1		
Arrowpoints	160	10	conical antler point	2		
	160	11	flat, trianguloid, bone point	15	2	
Flutes or whistles	160	12	with single oval perforation, variously situated	13		1
	160	13	with multiple round perforations	5		
Tubes	160	17	of bird bone, varying lengths and diameters	14		2
Beads	160	18	short, tubular, of bird bone	40	1	
Plume holders (?)			deer styliform bone, unmodified	6		
	160	14	deer styliform bone, base perforated	18	1	
	160	15	deer styliform bone, base perforated, point sharpened	8		
	160	16	deer styliform bone, base side-notched	3		
Beaver incisor tools	160	19	split, long edge or edges ground	4	1	
	160	20	whole, distal third to half ground, edge chisel-shaped	23		7
	160	21	whole, lower lateral surface gouge-shaped	1		1

TRAIT TABLE

LAMOKA FOCUS
(Continued)

Category	Plate No.	Figure No.	Trait	Lamoka	Geneva	Scottsville
BONE AND ANTLER						
Beaver incisor tools (cont.)	160	22	whole, edge chisel-shaped	18		
	160	23	entire lingual surface ground away, edge chisel-shaped	1		
Worked wolf teeth	160	24	canine, root notched each side near apex	1		
	160	25	canine, split, one long edge ground	1		
	160	26	canine, split, apex notched on each side	1		
	160	27	canine, root incised on one side near apex	1		
Worked bear teeth	160	28	canine, tip ground off transversely	2		
	160	29	canine, inner root surface ground away	1		
	160	30	molar, root perforated	1		
Worked dog teeth	160	31	canine, apex perforated	1		
	160	32	canine, apex grooved	1		
	160	33	incisor, apex notched	1		
Turtle-shell rattles			box turtle shell, single large perforation in plastron	1		
	160	34	box turtle, fragments of perforated plastron	4		
Deer antler pendants	161	2	split tine, apex perforated, long edges nicked	1		
	160	48	split tine, apex perforated, triangular series in intaglio on face, long edges nicked	2		
	160	47	flat, trapezoidal, 3 edges nicked, corner perforated, funnel-shaped design in intaglio on face	1		
Deer antler pendant-like artifacts	161	8	split tine object, imperforate, long edges nicked, bluntly pointed	9		
	161	6,9	split tine object, imperforate, long edges nicked, wedge-shaped end	10		2
	161	5,7	split tine object, imperforate, long edges nicked, end truncate or rounded	23		
	162	3,9	split tine object, fragmentary, long edges nicked	45	2	2
			split tine object, imperforate, bluntly pointed	2		
			split tine object, fragmentary	6	1	1
	161	3,4,7	split tine object, imperforate, decorated with bands of red paint, long edges nicked (mainly fragmentary)	9	1	

LAMOKA FOCUS
(Continued)

Category	Plate No.	Figure No.	Trait	Lamoka	Geneva	Scotts-ville
BONE AND ANTLER						
Worked bone and antler	160	35	long bone section, both ends obliquely polished	1		
	160	36	section of deer metapodial, condylar surface intact at one end, opposite end smoothly rounded	1		
	160	37	thick oval section long bone, blunt both ends, grooved near one end	1		
	160	38	fragmentary bone and antler objects, perforated apex	5		
	160	39	head of bear scapula, centrally perforated	1	2	
			fragment of deer rib, end and side polished			2
			deer antler, cut, scraped		4	
			deer antler tines, detached by burning, breaking or cutting	403	12	11
	160	40	porcupine incisor inserted in end of bird humerus	1		
	160	41	turkey tarsometatarsus, with spur core, both extremities cut off	2		
	160	42	grouse humerus, proximal condyle partially cut away	2		
	160	43,44	hook-shaped object of antler and one of turtle scapula	2		
			worked turtle scapula	1		
	160	45	small turtle femurs, perforated near distal extremity	4		
			fragment of fossil ivory (?)		1	
	160	46	fox mandible, perforated near angle	1		
Decorated bone and antler	159	23	bear ulna dagger, spiral stripes red paint	1		
	160	47	antler pendant, funnel-shaped design in intaglio on face	1		
	160	48	antler pendant, triangular series in intaglio on face	2		
	160	49	antler pendant-like object, striped with red paint	9	1	
	160	50	modified deer scapula, incised chevron or zig-zag designs	3		
	160	51	spike-shaped bone object, triangular in section, rectilinear and zig-zag engraving	1		
	160	52	narrow, curved antler object, edges nicked	1		
	158	57,58	awls, edges nicked on one, other has one surface engraved with roughly parallel lines	2		
			deer antler tine, unworked except 3 parallel rows of notches	1		

TRAIT TABLE

LAMOKA FOCUS
(Continued)

Category	Plate No.	Figure No.	Trait	Lamoka	Geneva	Scotts-ville
BONE AND ANTLER						
Decorated bone and antler						
(cont.)	159	34,35	pronghorn antler object, effigy animal head on base	3		
	161		other bone and antler artifacts with nicked edges, specified above	101	3	7
SHELL						
Pendants			portion of pendant, from pyriform conch shell section, apex perforated	1		
BURIALS			flexed (degree indeterminate)	5		
			flexed, tightly			1
			bundle			4
			single interment	5		1
			multiple interment			2
			powdered hematite on skeleton			1
			inhumation in refuse midden	5		5
MISCELLANEOUS			small breed of dog	(worked teeth)	7	
			separate dog burial		7	
			shallow pits	X	X	X
			hearths	X	X	X
			carbonized vegetal remains (acorns, nuts)	X		
			concentration of mussel shells in pits	X		
			concentration of helix shells in pits	X		
			chipped stone implements of jasper	2		
			chipped stone implements of argillite	6		
			chipped stone implements of slate	15	6	
			chipped stone implements of exotic chert	5	2	
			chipped stone implements of quartzite	5		

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